Final Agreement State Application

November 14, 2017

Revision 1(March 2nd, 2018)

Department of Environmental Quality

WYOMING

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Introduction

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Introduction

The history of uranium in Wyoming begins as early as 1910, when uranium deposits were discovered near the town of Lusk. However, it wasn't until the 1950's when the Atomic Energy Commission developed a program to purchase uranium at guaranteed prices, that the value of uranium was realized. Since then, uranium deposits have been identified throughout Wyoming, including the Powder River Basin, the Gas Hills, Crooks Gap, and Pumpkin Buttes.

Early on, uranium was primarily extracted through hard rock mining and then processed through conventional milling techniques. Over time, other technologies for the extraction and processing of uranium were tested. Specifically, in the 1960's, in-situ leaching (ISL) or in-situ recovery (ISR) of uranium was developed as a method for extracting uranium. This ISL or ISR technology has been refined and is currently the predominant method used to extract uranium in Wyoming.

The Wyoming Department of Environmental Quality (WDEQ) has regulated uranium recovery operations in the state since 1973, and throughout that time has worked with uranium operators, other state and federal agencies, and the general public to fulfill its mission to manage natural resources in a manner that maximizes the economic, environmental, and social prosperity of current and future generations. WDEQ currently regulates the mining operations of seven licensed ISL/ISR sites and one conventional site on standby. Additionally, WDEQ has ample experience working with the Nuclear Regulatory Commission (NRC) and Department of Energy (DOE). WDEQ has worked with these agencies to reclaim and restore numerous uranium recovery operations throughout Wyoming. This includes the decommissioning, reclamation, restoration, and transfer for long-term care and maintenance of three conventional mill sites, and seven sites that are currently progressing towards transfer to DOE. As such, DEQ has vast knowledge and experience in the environmental regulation of uranium operations, including expertise in the areas of safety, surface reclamation, and groundwater restoration.

Section 274 of the Atomic Energy Act of 1954, 42 U.S.C § 2021, as amended (AEA) authorizes states to assume certain regulatory functions that would otherwise be the responsibility of the NRC. This originally included the licensing of byproduct material, source material, and small quantities of special nuclear material. Under the AEA, the mechanism by which a state assumes such regulatory function is through a formal "Agreement" between the NRC and the Governor of the state. Prior to executing the Agreement and achieving "Agreement State" status, the Governor must certify that the state has a program for the control of radioactive material and respective radiological hazards, and that the state's program satisfies the requirements of Section 274(o) of the AEA. Additionally, the state program must be compatible with all aspects of the NRC's requirements.

There must be legislation authorizing the Governor to enter into such an Agreement. The Wyoming Environmental Quality Act and Wyoming Statutes § W.S. 35-11-2001, authorize the Governor, on behalf of Wyoming, to enter into a limited agreement with the NRC for regulatory authority solely over source material involved in the extraction or concentration of uranium or

thorium in source material and ores at milling facilities, and the management and disposal of byproduct material as defined in Section 11e.(2) of the AEA. Under this Agreement, the NRC will retain regulatory authority over all other source material, byproduct material as defined in 11e. (1), 11e. (3), and 11e. (4) of the AEA, special nuclear materials, and 11e. (2) byproduct material located at independent or commercial laboratories.

NRC has established standards on approving Limited Agreements with states. The NRC must find that the Limited Agreement: (1) Promotes an orderly regulatory pattern between the NRC and state governments with respect to nuclear development and the use and regulation of byproduct, source, and special nuclear materials; (2) Identifies discrete categories of material or classes of licensed activity that can be reserved to NRC authority without undue confusion to the regulated community or burden to NRC resources; (3) Can be applied logically, and consistently to existing and future licensees over time; and (4) Will not cause a burden on NRC resources. On July 5, 2016 the NRC found that Wyoming's proposed Limited Agreement would meet all of these objectives (SECY 16-0084).

As such, Wyoming submits this application to enter into a Limited Agreement with the NRC. Included in this application are the statutes, rules and regulations, procedures, and other information necessary to demonstrate that the program satisfies all requirements for becoming an Agreement State, and that Wyoming is prepared and qualified to assume regulatory authority over source material involved in the extraction or concentration of uranium or thorium in source material and ores at milling facilities, and the management and disposal of byproduct material as defined in Section 11e.(2) of the (AEA). By entering an Agreement with the NRC, Wyoming will continue to ensure that state natural resources are managed to maximize the economic, environmental, and social prosperity of current and future generations and that public health, safety, and the environment are protected. For your convenience, this application is formatted using SA-700, Handbook for Processing an Agreement (Section 4.0, Information Needed and Evaluation Criteria). Wyoming has provided an introductory overview of the necessary criteria and an explanation of how each criterion is satisfied. Additionally, for each subsection, Wyoming provides copies of any pertinent information, including applicable statutes or rules and regulations.

Overview of SA 700 Handbook for Processing an Agreement

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Overview
SA-700, Handbook for Processing an Agreement Section 4.0: Information Needed and Evaluation Criteria

4.1 Legal Elements

4.1.1 Authority to Establish a Program and Enter an Agreement

WDEQ statutory authority to establish and implement the Agreement with the NRC is provided in the Wyoming Environmental Protection Act, The Administrative Procedure Act, and The Wyoming Government Ethics and Disclosure Act. Copies of these acts can be found as appendices to Subsection 4.1.1.

The State's rulemaking process has been a mixture of incorporation by reference of federal regulations, and modification or duplication of federal regulations to meet specific state needs. It is important to note that changes to federal regulations must be accounted for through amendments of state rules, and regulations in subsequent rulemaking.

Interpretation of Wyoming law is performed by the Wyoming Attorney General's Office. An Assistant Attorney General has been assigned to represent the Uranium Recovery Program (URP) and provides legal support and advice to the URP.

4.1.2 Organization of the Proposed Program

The URP is responsible for the implementation of the program. The URP falls within the WDEQ Land Quality Division. Accordingly, work required by the program may be divided between LQD and URP staff, depending on the expertise of the staff. URP staff will be responsible for licensing, inspection, decommissioning, and enforcement in their areas of expertise.

A brief history of uranium mining in Wyoming is contained in the Introduction of this application. A narrative on how the program satisfies NRC criteria found in SA-700 Handbook for Processing an Agreement, a description of the program, and the applicable organizational charts are located as appendices to Subsection 4.1.2.

4.1.3 Content of the Proposed Agreement

Wyoming is requesting authority to regulate source material involved in the extraction or concentration of uranium or thorium in source material and ores at milling facilities, and the management and disposal of byproduct material as defined in Section 11e.(2) of the (AEA).

Wyoming is not seeking regulatory authority over source material other than source material involved in the extraction or concentration of uranium or thorium in source material and ores at milling facilities, byproduct material as defined in Section 11e.(1), 11e.(3), and 11e.(4), or special nuclear material. Additionally, NRC will retain regulatory authority over 11e.(2) byproduct material at independent or commercial laboratories. Lastly, the NRC will retain regulatory authority over the American Nuclear Corporation Site, once the State fulfills its

obligations as agreed upon in the Confirmatory Orders and Modifications of Confirmatory Orders.

The draft of the formal Agreement is provided in Subsection 4.1.3.

4.2 Regulatory Requirements Program Elements

4.2.1 Standards for Protection Against Radiation

WDEQ has developed rules and regulations that create standards for protection against radiation as it pertains to the limited scope of material Wyoming is seeking to regulate. Copies of those rules and regulations, along with compatibility tables demonstrating how Wyoming meets the federal compatibility requirements, are contained within Subsection 4.2.1.

4.2.2 Regulatory Requirements with Significant Transboundary Implications

WDEQ has developed rules and regulations that meet compatibility requirements set forth by the NRC for items that have significant transboundary implications. Copies of those rules and regulations, along with a compatibility tables demonstrating how Wyoming meets the federal requirements, are contained in Subsection 4.2.2.

4.2.3 Regulatory Requirements Needed for an Orderly Pattern of Regulation or Which Have Particular Health and Safety Significance

WDEQ has developed rules and regulations that meet NRC criteria for establishing an orderly pattern of regulation or which have particular health and safety significance. Please refer to the copy of the rules and regulations and the compatibility tables in Subsection 4.2.3.

4.3 Licensing Program Elements

4.3.1 Procedures for the Technical Evaluation of Proposed Uses of Radioactive Material

The URP is responsible for establishing written licensing procedures for the safe use, storage, and possession of licensed materials. Technical procedures that have been modeled on NRC procedures along with standard review plans, checklists, and policies will assure the applications are thoroughly and equitably evaluated. URP procedures and policies used to evaluate the use of radioactive material are found in appendices to Section 4.3.

4.3.2 Procedures for the Evaluation of Radiation Safety Information on Sealed Sources and Devices and Registration for Distribution

Wyoming is not seeking authority over sealed sources and therefore does not have procedures for the evaluation of radiation safety information on sealed sources and devices, or the registration for distribution of sealed sources and devices.

4.3.3 Procedures for Conducting the Technical Evaluation of a Proposed License for a Low-Level Radioactive Waste (LLRW) Land Disposal Site

Wyoming is not seeking authority over Low-Level Radioactive Waste and therefore does not have procedures in regard to conducting the technical evaluation of proposed license for a

low-level radioactive waste (LLWR) land disposal site.

4.3.4 Procedures for Conducting Technical Evaluation of a Proposed Uranium or Thorium Recovery Facility

The URP is responsible for establishing written licensing procedures for the evaluation of proposed uranium and thorium recovery facilities. Technical evaluation will be modeled after NRC guidance. URP procedures for the evaluation of proposed uranium and thorium recovery facilities are found as appendices to Section 4.3.

4.3.5 Procedures for Assuring the Technical Quality of Licenses

Wyoming has established procedures as a means of assuring the integrity and quality of licensing actions. Included in the procedure is a requirement that all technical evaluations of licenses will be submitted for a secondary review prior to being sent for evaluation and signature. The procedures are contained in Section 4.3.

4.3.6 Administrative Licensing Procedures

Wyoming's administrative procedures for licensing that address receipt of licensing actions to technical evaluators, license documentation preparation, tracking of action progress, signing of completed licenses, transmittal of signed license to the licensee, and license file maintenance can be found as appendices to Section 4.3.

4.4 Inspection Program Elements

4.4.1 Procedures for Inspecting Facilities where Radioactive Material is Stored or Used

URP has developed procedures that include guidance on scheduling, conducting inspections, and how to document these findings in a narrative inspection report. The procedures are based on NRC and other Agreement States' procedures. URP procedures for inspecting facilities where radioactive material is stored or used are provided as appendices to Section 4.4.

4.4.2 Procedures for Assuring Technical Quality of Inspections and Inspection Reports

URP has developed procedures that will be used to assure the technical quality of inspection and inspection reports. All inspection reports will be reviewed by an immediate supervisor. Questions that arise during the course of an inspection, as well as potential violations must also be reported and discussed with an immediate supervisor. URP procedures for assuring technical quality of inspections and inspection reports are provided as appendices to Section 4.4.

4.4.3 Administrative Procedures for Inspection

URP's procedures governing the generation of an inspection report, review of an inspection report, and the impact of the inspection report are provided as appendices to Section 4.4.

4.5 Enforcement Program Elements

4.5.1 Routine Enforcement Procedures

NRC requirements for routine enforcement procedures are consistent with existing WDEQ policy and procedures on enforcement. URP procedures govern how the URP will enforce its rules and regulations, and those procedures are contained in Section 4.5.

4.5.2 Escalated Enforcement

In addition to written Notices of Violations and monetary penalties, severe or repeated violations will lead to escalated enforcement actions. These actions can include license suspension or revocation. URP procedures governing escalated enforcement actions can be found in Section 4.5.

4.6 Technical Staffing and Training Elements

The URP has adopted staffing standards similar to NRC standards. All technical staff will meet IMC 1248 App H and I, such that they can maintain equivalent qualifications to NRC Uranium Recovery Inspectors and License Reviewers. URP qualification requirements include a combination of formalized training and self-study requirements.

4.6.1 Technical Staff Organization

WDEQ has conducted an analysis of expected workload associated with the URP, and established an appropriate staffing plan. WDEQ relied on a Feasibility Study conducted prior to Wyoming's Letter of Intent, which evaluated the resources necessary for Wyoming to enter into an Agreement with the NRC.

URP staff will be responsible for both inspections and licensing. The program will have four technical Full-Time Employees (FTE), a manager, one Attorney through the Attorney General's Office, and one Administrative Assistant. The program will also rely on three existing LQD personnel. The URP staffing breakdown, based on workload, can be found in Subsection 4.6.1.

4.6.2 Formal Qualification Plan

An effective program depends on experienced staff and adequate training for staff. URP's training program mirrors the NRC's training programs. URP position descriptions and qualification plans are found as appendices to Subsection 4.6.2.

4.6.3 Current Technical Staff Qualifications

The URP currently employs four technical Full-Time Employees, one manger, one Attorney through the Wyoming Attorney General Office, and one Administrative Assistant. Employee's resumes and qualification journals are provided in Subsection 4.6.3. This subsection demonstrates the educational level, experience, and specialty training of URP staff.

For URP staff who have not completed the requisite training, Wyoming has included a training plan that contains expected completion timeframes for maintaining equivalency to NRC training standards.

4.7 Event Allegation Response Program Elements

4.7.1 Procedures for Responding to Events and Allegations

Responses to allegations and events will follow the URP procedures set forth in Subsection 4.7.1. These procedures are based on NRC guidance and other Agreement States' procedures. Allegations of improper activities will be investigated in a timely manner and, if confirmed, enforcement actions may be taken. Additionally, these procedures detail the process the URP will follow when responding to an event.

4.7.2 Procedures for identifying Significant Events and Submitting for Entry into the Nuclear Material Events Database

Events that are required to be reported to the Nuclear Material Events Database (NMED) will be appropriately entered into the database. URP procedures describing the States process for entering information into the NMED database are included in Subsection 4.7.2. These procedures are based on NRC guidance.

Response to NRC Comments on Draft Application

Department of Environmental Quality

WYOMING

Response to NRC Comments on Wyoming Draft Application for a Limited Agreement Dated October 2016

Subsection 4.1 Legal Elements

NRC Comment 1

The NRC review team has only previously reviewed Article 20, Nuclear Regulatory Agreement, the Data Collection Trespass Law, and specific legislative provisions that were submitted to show authorization to implement specific requirements for the 274b. Atomic Energy Act of 1954, 42 U.S.C. § 2014(e)(2), as amended, (AEA) Agreement (274b. Agreement) for Wyoming's uranium recovery program. Some of the legislation in the draft application has not been previously reviewed and creates uncertainty regarding how this legislation relates to the implementation of Wyoming's uranium recovery program. Many of the Articles in the draft application refer to "mining," and it is unclear if these provisions apply to the uranium and thorium milling program. The Articles also frequently use the term "permits" and do not use the term "licenses." It is understood that Wyoming regulates mining activities within the State. It will be necessary for Wyoming to distinguish within the Articles which provisions apply to the uranium and thorium milling program and which provisions apply to the regulation of mining. Additionally, within the provisions that apply to the uranium and thorium milling program, please use the term "licensing." Nuclear Regulatory Commission (NRC) regulations do not use the term "permits" within its regulations.

The NRC review team would like to schedule a meeting to discuss the interactions between these various legislative provisions in more detail. The following are our specific concerns on Article 1, General Provisions; Article 4, Land Quality; and Article 20, The Nuclear Regulatory Agreement.

WDEQ Response:

While the Wyoming Department of Environmental Quality (WDEQ) realizes that the statutes repeatedly refer to "mining/permits" it is important to understand that there are two separate processes involved in issuing a company the permissions to engage in activities in Wyoming. A company must obtain a permit to mine and a source material license. This is very similar to the process that currently exists between the NRC and WDEQ. The terms mining and milling as it relates to in situ operations are synonymous, however it may be helpful to distinguish them as mining relates to the permit to mine and milling relates to the source material license. There will be overlap in the two processes, and these overlaps currently with NRC was one of the main motivating factors for Wyoming to seek an Agreement. For NRC review purposes, review should focus on whether the requirements for a source material license are compatible with NRC requirements.

NRC Comment 2

On page 7 of 1080, the last paragraph states that the NRC will retain authority over the six 11e.(2) decommissioning sites (i.e., Uranium Mill Tailings Radiation Control Act (UMTRCA) Title II sites) in Wyoming after the transfer of regulatory authority. The draft application deviates from the limited 274b. Agreement as outlined and approved by the Nuclear Regulatory Commission in SRM SECY-16-0084.

The NRC requests this language be removed or revised so Wyoming's assumes authority over all 11e.(2) sites in the final application.

WDEQ Response:

After consultation with Nuclear Regulatory Commission (NRC), the Title II sites will be transferred to the State accompanied with Memorandums of Understandings (MOUs) outlining the remaining reclamation and decommissioning requirements the WDEQ will be responsible for ensuring prior to termination. The MOU will help remove any duplicative efforts by NRC and WDEQ. References to the MOU will be included in the Final Agreement as shown in Appendix A of Section 4.1.3 of this application.

NRC Comment 3

On page 30 of 1080, Wyoming Statute 35-11-103(d)(v), the definition states "Commercial radioactive waste management facility' means any facility used or intended to be used to receive for disposal, storage, reprocessing or treatment, any amount of radioactive wastes which are generated by any person other than the facility owner or operator, or which are generated at a location other than the location of the facility."

Please clarify how the definition of "commercial radioactive waste management facility" and the provisions in this section interact with the NRC regulatory requirements and affect Wyoming's implementation of the NRC's regulatory requirements. It will be necessary to indicate how commercial radioactive waste management facilities within Wyoming's jurisdiction will be regulated with regard to the provisions in the Articles pertaining to the uranium and thorium milling program (specifically, Wyoming regulations equivalent to 10 CFR Part 40) and as related to the scope of material defined in the Agreement.

WDEQ Response:

The Environmental Quality Act outlines the regulatory authorities granted to the WDEQ. The WDEQ is than further divided into division with their own missions and regulatory authorities. W.S. § 35-11-103(d) are specific definitions to Solid and Hazardous Waste and have no implications for other divisions such as Land Quality Division (LQD).

NRC Comment 4

On page 32 of 1080, Wyoming Statute 35-11-103(e)(i), the definition states, "Reclamation' means the process of reclaiming an area of land affected by mining to use for grazing, agricultural, recreational, wildlife purposes, or any other purpose of equal or greater value. The process may require contouring, terracing, grading, resoiling, revegetation, compaction and stabilization, settling ponds, water impoundments, diversion ditches, and other water treatment facilities in order to eliminate water diminution to the extent that existing water sources are adversely affected, pollution, soil and wind erosion, or flooding resulting from mining or any other activity to accomplish the reclamation of the land affected to a useful purpose;"

The definition mentions "mining" and does not mention "milling" or radioactive materials.

Please clarify if the definition of "reclamation" applies to the agreement materials and how it affects Wyoming's implementation of NRC regulatory requirements. Specifically, it will be necessary for Wyoming to indicate how it will implement "reclamation" as it applies to the provisions in the Articles pertaining to the uranium and thorium milling program.

WDEQ Response:

The requirements for reclamation as presented in 35-11-103(e)(i) pertain to the permit to mine process and are pertinent to Land Quality Division. Specific reclamation requirements as it pertain to radioactive material are outlined in Uranium Recovery Rules Chapter 4 which contain an incorporation of 10 CFR 40 APP A.

NRC Comment 5

On page 33 of 1080, Wyoming Statute 35-11-103(e)(viii), the definition states, "Operation' means all of the activities, equipment, premises, facilities, structures, roads, rights-of-way, waste and refuse areas excluding uranium mill tailings and mill facilities, within the Nuclear Regulatory Commission license area, storage and processing areas, and shipping areas used in the process of excavating or removing overburden and minerals from the affected land or for removing overburden for the purpose of determining the location, quality or quantity of a natural mineral deposit or for the reclamation of affected land."

Please clarify what the phrase "excluding mill tailings and mill facilities, within the Nuclear Regulatory Commission license area" means in terms of the Wyoming's implementation of NRC regulatory requirements. Would the definition of "operation" be revised if Wyoming assumes regulatory authority over source material involved in milling and the associated 11e.(2) byproduct material? Please also clarify how this exclusion affects the other definitions in this section.

WDEQ Response

Pursuant to W.S. § 35-11-103(e), the definition of "Operation" identified by the NRC comment is only applicable to the Land Quality Division and not the Uranium Recovery Program (URP). Additionally, at the time of agreement, there will not be any "Nuclear Regulatory Commission license area, it will become a state license area. Regardless, the URP program included that the definition of "Operation" as it pertains to the Uranium Recovery Program specifically, in Chapter 1 as follows:

"Operation" means all of the activities, equipment, premises, facilities, structures, roads, right-of-way, waste and refuse areas, storage and processing areas, and shipping areas used in the process of excavating or removing overburden and minerals from the affected land or for removing overburden for the purpose of determining the location, quality or quantity of natural, deposit or for the reclamation of affected lands.

The following recommendation was discussed with NRC staff and found to be acceptable and the comment was considered resolved.

NRC Comment 6

On page 36 of 1080, Wyoming Statute 35-11-103(f), it states "[S]pecific definitions applying to in situ mining are:"

"Mining" is not regulated by the NRC and will not be included in the limited 274b. Agreement. It is unclear if these definitions apply to Wyoming's proposed 274b. Agreement for source material involved in uranium and thorium milling. Please specify which of these definitions apply to Wyoming's implementation of NRC regulatory requirements.

WDEQ Response:

The definitions in 35-11-103(f) are applicable to the permit to mine process. Some of these items are required for both the permit to mine and the NRC source material license. NRC regulatory requirements are contained within URP regulations, more specifically in Chapter 4 which is compatible with 10 CFR Part 40.

NRC Comment 7

On page 36 of 1080, Wyoming Statute 35-11-103(f), it states, "[S]pecific definitions applying to in situ mining are: "(iii) 'Ground water restoration' means the condition achieved when the quality of all ground water affected by the injection of recovery fluids is returned to a quality of use equal to or better than, and consistent with the uses for which the water was suitable prior to the operation by employing the best practicable technology."

The "groundwater restoration" definition uses the term "quality of use," which is not compatible with the restoration criteria of background, maximum contaminant level (MCL), or alternate concentration limit (ACL) as outlined in 10 CFR Part 40, Appendix A, Criterion 5. The criterion requires restoration to background level, or MCL unless the regulatory authority approves a licensee's request for an ACL. Class of use is only one, of

many factors, that the regulatory authority can consider when making its ACL determination.

Please remove the term “quality of use” from the definition of “groundwater restoration.” This comment is related to comment 59 under Regulatory Requirements Program Elements.

WDEQ Response:

35-11-103(f) defines groundwater restoration as restoration to quality of use equal to **or better than** the use suitability prior to the operation by using best practicable technology. Emphasis is placed on the "or better" aspect of the definition as it allows for and contemplates standards higher than just class of use. The “or better” language of this statute is defined by Chapter 11, Section 5(a)(ii)(D) of the Non-Coal Rules which states:

> "Regardless of the restored groundwater quality in the production zone, the adjacent aquifers and other waters within the same aquifers must be fully protected to their class of use and, outside the aquifer exemption boundary, to applicable Maximum Contaminant Levels from the U.S. Environmental Protection Agency Rules (40 C.F.R Part 141 as amended July 01, 2001). If the restored groundwater in the production zone poses a threat to groundwater outside the production zone, then flow and/or fate and transport models shall be used to assist in determining what action, including monitoring sufficient to verify the model, needs to be taken."

The purpose of this rule is to protect adjacent aquifers. To achieve this objective, this rule requires that an operator demonstrate that adjacent aquifers are not threatened and requires the restoration of the production zone to a background or an MCL. If this can't be achieved, then an alternate concentration limit (ACL) for the production zone can be approved by the Department. However, the ACL must be protective of adjacent aquifers and will require modeling along with sufficient monitoring to validate the model in order to demonstrate the protectiveness of the limit. Additionally, protection of adjacent aquifers is further bolstered by the Uranium Recovery Rules, which incorporate 10 CFR 40, Appendix A, criterion 5(b)(5) by reference. This criterion states that groundwater must be restored to background, MCL, or a Commission approved ACL. Thus, there are no inconsistencies between Wyoming statutes and rules and 10 CFR 40. Additionally, WDEQ and the NRC have identical restoration goals. The only minor difference with respect to groundwater restoration is that WDEQ’s rules are slightly more stringent and require that a licensee also meet the pre-use class suitability, in addition to background, MCL, or an ACL.

<u>NRC Comment 8</u>

On page 40 of 1080, Wyoming Statute 35-11-103(j)(i), the definition states, “’Byproduct material’ means the tailings or wastes produced by the extraction or concentration of uranium and thorium from any ore processed primarily for its source material content as defined in section 11.(e)(2) of the Atomic Energy Act of 1954, 42 U.S.C. § 2014(e)(2), as amended; ”

The definition of “byproduct material” is inconsistent with the definition of byproduct material in Article 20.

Please revise the definition of byproduct material to be consistent with Article 20.

WDEQ Response:

The definition of byproduct material was changed to be consistent with Article 20 to the satisfaction of the NRC.

NRC Comment 9

On page 41 of 1080, Wyoming Statute 35-11-103(j)(iii), the definition states, “’Source material’ means uranium or thorium, or any combination thereof, in any physical or chemical form or ores which contain by weight one-twentieth of one percent (0.05%) or more of uranium, thorium, or any combination thereof. Source material does not include special nuclear material.”

The definition of “source material” is inconsistent with the definition in Section 11z. of the AEA, 42 U.S.C. § 2014(e)(2), as amended; and Article 20.

Please revise the definition of “source material” to be consistent with Article 20.

WDEQ Response:

The definition of source material was changed to be consistent with Article 20 to the satisfaction of the NRC.

NRC Comment 10

On page 256 of 1080, Wyoming Statute 35-11-1609(d) specifies the process for handling a petition for long-term surveillance. The process in this regulation does not align with the UMTRCA Title II requirements for transferring sites to a custodial agency (e.g., the Department of Energy (DOE)). Guidance for long- term surveillance plans can be found in NMSS Agreement State Procedure Approval SA-900, “Termination of Uranium Milling Licenses in Agreement States” (SA-900).

Please clarify how the procedures in this regulation align with the UMTRCA Title II requirements for transferring sites to a custodial agency.

WDEQ Response:

The referenced statute governs the voluntary remediation of contaminated sites held within the Solid and Hazardous Waste Division and is not applicable to the Land Quality Division or the regulated community governed under Wyoming's limited agreement. After discussions with the NRC, it appeared that the provided response satisfied NRC concern.

NRC Comment 11

On page 266 of 1080, General Comment: It appears there are legislative amendments to Article 20 and other legislative provisions that would apply to Wyoming's implementation of NRC regulatory requirements that are not included in Article 20.

Please provide the current version of Article 20 in its entirety and include all statutes that apply to Wyoming's implementation of NRC regulatory requirements

WDEQ Response:

Finalized Article 20 was sent to NRC. The revised Article 20 is contained within the Environmental Quality Act presented in Appendix A of Section 4.1.1 of this application.

NRC Comment 12

On page 266 of 1080, General Comment: in Article 20 in Section 35-11- 2002(c), it states that the provisions in Article 4 apply to all licenses issued and actions taken under Article 20, except to the extent that the Article 20 provisions are inconsistent with Article 4 provisions.

Please clarify if, or how, Article 4 applies to Wyoming's implementation of NRC regulatory requirements with regard to the reference in Section 35-11-2002(c).

WDEQ Response:

Article 4 applies to the permits to mine. Within Article 4, the statutes govern solely the mining permit. In contrast, Article 20 applies to the materials license. Within Article 20, the statutes govern the materials license.

In all instances, an operator must comply with both Article 4 and Article 20 if they plan on obtaining a permit and materials license. Although each Article governs the regulation of separate things (a permit versus a license), there may be some regulatory overlap given the nature of in situ recovery process. The language in Section 35-11-2002(c) allows for the regulation and enforcement of requirements found in Article 4, in addition to the regulation and enforcement of requirements found in Article 20. It is intended to capture the general provisions found in Article 4.

For example, Section 35-11-403 establishes the powers of the administrator for the land quality division. As previously discussed, the URP will fall within the land quality division. Therefore, the administrator for the land quality division will also be the administrator for the URP. Therefore, Section 35-11-2002(c) will clarify the land quality division structure with respect to the permit to mine and materials license processes and extends the general administrative authority and powers to the URP. This language assists with bringing a new program into the land quality division.

NRC Comment 13

On page 266 of 1080, Wyoming Statute 35-11-2003(e), it states that the NRC will retain regulatory authority over independent or commercial laboratory facilities that are handling 11e.(2) byproduct material, but does not mention source material involved in uranium milling.

Please clarify if Wyoming intends to have regulatory authority over the source material involved in milling at independent or commercial laboratory facilities or if there will be revisions to the legislation so that the NRC would be the sole regulatory authority over these facilities.

WDEQ Response:

Wyoming does not intend to regulate source material at independent or commercial laboratory facilities. The URP revised the Uranium Recovery regulations to provide additional clarity:

URP Chapter 1, Section 3

(a) Except as otherwise specifically provided, these rules apply to all persons who receive, possess, use, offer and receive for transfer, own, or acquire, any byproduct material or source material from the extraction and concentration of source material at uranium and thorium milling facilities. Nothing in these rules shall apply to any person to the extent such person is subject to regulation not relinquished by the United States Nuclear Regulatory Commission (NRC). These rules do not govern the mining or removal of source material in its natural state or independent or commercial laboratory facilities that possess, use, or accept byproduct or source material. These rules apply to laboratories located at facilities licensed under these regulations.

After discussion with the NRC the revised language satisfied the concerns of the NRC

NRC Comment 14

On page 267 of 1080, Wyoming Statute 35-11-2003(d), it states, "[T]he department shall inspect a licensee's operation to ensure compliance with license conditions, as determined necessary by the administrator of the land quality division to protect public health and safety. The department shall also inspect proposed facilities and proposed expansion of existing facilities to ensure that unauthorized construction is not occurring. Licensees, permittees and applicants for a license or permit shall obtain and grant the department access to inspect their mining operations, source material recovery or milling operations and byproduct material generated at such times and frequencies as determined necessary by the department to protect public health and safety."

"Inspections" do not occur until after a license is issued. However, NRC recognizes that some State statutes or regulations can conduct an "inspection" prior to the issuance of a license. Please confirm that the use of the term "inspection" is correct. If not, the term "site licensing visits" or similar term should be used to describe on- site visits prior to issuance of a license. Guidance on pre-licensing on-site visits can be found in NUREG-

1556, Volume 20, “Guidance on Administrative Licensing Procedures”. This comment is related to comment 71.

WDEQ Response:

WDEQ understands the comment presented by NRC on pre-licensing visits but the state is and has allowed inspections to occur before licenses/permits have been issued. Wyoming will continue to refer to pre-licensing visits as inspections and NRC has affirmed that as long as the State has the authority to inspect before issuance of a license/permit that the comment will be resolved.

NRC Comment 15

On page 267 of 1080, Wyoming Statute 35-11-2003(e), it states, “[W]hen issuing a license for byproduct material under this article, the director shall require licensees to provide an approved financial assurance arrangement consistent with nuclear regulatory commission requirements provided in 10 CFR Part 40, Appendix A, Criterion 9, as amended. The arrangement shall contain sufficient funds to cover the costs of decommissioning and, to the extent applicable, long-term surveillance and maintenance for conventional source material milling and heap leach facilities.”

The phrase “to the extent applicable” is inconsistent with 10 CFR Part 40, Appendix A, Criterion 9. The provision should read, “[W]hen issuing a license for byproduct material under this article, the director shall require licensees to provide an approved financial assurance arrangement consistent with nuclear regulatory commission requirements provided in 10 CFR Part 40, Appendix A, Criterion 9, as amended. The arrangement shall contain sufficient funds to cover the costs of decommissioning and long-term surveillance and maintenance for conventional source material milling and heap leach facilities.”

WDEQ Response:

Changes were made pursuant to previous NRC requests. The language "to the extent applicable" was removed and the comment is resolved.

NRC Comment 16

On page 268 of 1080, Wyoming Statute 35-11-2004(a), it states, “[T]he department shall prescribe conditions in licenses issued, renewed or amended for an activity that results in production of byproduct material to minimize or, if possible, eliminate the need for long-term maintenance and monitoring before the termination of the license.”

The language in the regulation, "if possible, eliminate the need for long-term maintenance and monitoring before licensing termination," implies that there may be the need for long-term maintenance and monitoring after license termination. This may be the case for a conventional mill tailings impoundment or heap leach facility being transferred to a custodial agency for long-term care and maintenance, but would not be the case for an in situ recovery (ISR) facility.

Please clarify the meaning of this phrase in your regulations.

WDEQ Response:

The phrase is there to eliminate the need of multiple long-term care facilities. NRC is correct that ISR facilities would be expected to dispose of byproduct material at a licensed facility. After discussion with NRC, the comments was determined to be resolved

NRC Comment 17

On page 268 of 1080, Wyoming Statute 35-11-2004(b), it states, "[P]rior to terminating any license the administrator of the land quality division shall obtain a determination from the nuclear regulatory commission that the licensee has complied with the commission's decontamination, decommissioning, disposal and reclamation standards."

Partial site release for ISR facilities is common. If an amendment to a future Wyoming materials license resulted in shrinkage of an ISR licensed boundary (i.e., partial release), the NRC review team should have the ability to review a partial site release to make a determination that all applicable standards and requirements pertaining to such material have been met consistent with SA-900. Please provide Wyoming's process for handling partial site releases.

WDEQ Response:

The URP revised the regulations with the following language to provide clarity on partial site releases.

URP Chapter 4 Section 16(k)

(k) A licensee may request that a subsite or a portion of a licensed area be released for unrestricted use before full license termination as long as release of the area of concern will not adversely impact the remaining unaffected areas and will not be recontaminated by ongoing authorized activities. When the licensee is confident that the area of concern will be acceptable to the Department for release for unrestricted use, a written request for release for unrestricted use and Department confirmation of closeout work performed shall be submitted to the Department. The request should include a comprehensive report, accompanied by survey and sample results thatshow contamination is less than the limits specified in 10 C.F.R. Part 40, Appendix A and an explanation of how ongoing authorized activities will not adversely affect the area proposed to be released. Upon confirmation by the Department that the area of concern is releasable for unrestricted use, the licensee may apply for a license amendment, if required.

(i) The Department will submit partial site releases to the NRC in accordance to SA-900 for approval; and

(ii) Prior to terminating any license, the Administrator of the Land Quality Division shall receive approval and a determination from the NRC that the licensee has complied with the NRC's decontamination, decommissioning, disposal and

reclamation standards in accordance with SA-900.

After discussion with NRC the changes satisfy NRC concerns represented in comment 17.

NRC Comment 18

On page 273 of 1080, Wyoming Statute 35-11-2003(e), it states, "[W]hen issuing a license for byproduct material under this article, the director shall require licensees to provide an approved financial assurance arrangement consistent with nuclear regulatory commission requirements provided in 10 CFR part 40, appendix A, criterion 9, as amended. The arrangement shall contain sufficient funds to cover the costs of decommissioning and, to the extent applicable, long-term surveillance and maintenance for conventional source material milling and heap leach facilities."

The phrase "to the extent applicable" is inconsistent with 10 CFR Part 40, Appendix A, Criterion 9. The provision should read, "[W]hen issuing a license for byproduct material under this article, the director shall require licensees to provide an approved financial assurance arrangement consistent with nuclear regulatory commission requirements provided in 10 CFR Part 40, Appendix A, Criterion 9, as amended. The arrangement shall contain sufficient funds to cover the costs of decommissioning and long-term surveillance and maintenance for conventional source material milling and heap leach facilities."

WDEQ Response:

See Comment 15.

NRC Comment 19

On page 274 of 1080, Wyoming Statute 35-11-2004(c), it states, "[P]rior to terminating a byproduct material license the department shall ensure the ownership of a disposal site and the byproduct material resulting from licensed activity are transferred to: (i) The state of Wyoming; or (ii) [T]he federal government if the state declines to acquire the site, the byproduct material, or both the site and the byproduct material."

It is unclear how Wyoming can separate the site from the byproduct material with regard to the termination of the material license.

Please clarify what Wyoming meant with this statement and how it would affect the termination of material licenses.

WDEQ Response

If ever a situation existed where the site needs to be separated from the byproduct material this would provide for that case. There are examples of byproduct and lands being split; as in the case of Western Nuclear Split Rock where institutional controls have been instituted in areas where surface ownership could not be transferred. There may be situations in the future where portions of the long term boundary may be better equipped to be managed by the State. NRC would still need to approve this split approach, but this statute allows the State to ask the NRC the question if a need arose.

NRC Comment 20

On page 321 of 1080, Section 4.1.2.4, the last sentence of the first paragraph states, [O]nce primacy has been obtained the Program will fill another technical position."

The term "primacy" is generally used within the Environmental Protection Agency, Underground Injection Control Program to describe the EPA's delegation of authority to a State to implement a regulatory program. Unlike EPA, the NRC does not delegate authority, but discontinues regulatory authority under the Agreement State program.

Please revise the sentence to state, [O]nce the agreement goes into effect the Program will fill another technical position.

WDEQ Response

The term "Primacy" was revised throughout the Agreement.

NRC Comment 21

On page 328 of 1080 Section 4.1.3.1, subsection (3), it states, "[T]he State does not seek authority over Title II sites where the Commission has initiated review of the Long- Term Surveillance Plan. The Commission will retain regulatory authority over such Title II sites.

This provision deviates from the scope of material of the limited 274b. Agreement as outlined and approved by the NRC in SRM SECY 16-0084.

Please revise the section to be consistent with the limited Agreement approved by the Commission.

WDEQ Response:

After consultation with Nuclear Regulatory Commission (NRC), the Title II sites will be transferred to the State with a Memorandums of Understandings (MOUs) outlining the remaining reclamation and decommissioning requirements the WDEQ will be responsible for ensuring prior to termination. The MOU will help remove any duplicative efforts by NRC and WDEQ. References to the MOU will be included in the Final Agreement as shown in Appendix A of Section 4.1.3 of this application.

NRC Comment 22

On page 328 of 1080 Section 4.1.3.1, subsection (4), it states, "[T]he Commission's Confirmatory Orders and Modifications (Docket No. 40-4492) with respect to the American Nuclear Corporation site located in the Gas Hills, Wyoming, as accepted and agreed upon by the State will still govern after the proposed Agreement is executed.

Following the State's fulfillment of the obligations agreed upon in the Confirmatory Orders and Modifications, the Commission shall retain authority over the decommissioning of the American Nuclear Corporation Site."

This deviates from the scope of material of the limited 274b. Agreement as outlined and

approved by the Nuclear Regulatory Commission in SRM SECY-16-0084.
Please delete or revise subsection (4) to be consistent with the limited Agreement approved by the Commission.

WDEQ Response:

Waiting on guidance from NRC on how to transfer ANC.

NRC Comment 23

On page 329 of 1080, the first whereas clause states "[S]ource material involved in the extraction and concentration of uranium and thorium …."

This language is inconsistent with the description source material in the current Wyoming legislation and 11e.(2) in the AEA, 42 U.S.C. § 2014(e)(2), as amended. The language should be revised to state "[S]ource material involved in the extraction or concentration of uranium or thorium in source material and ores at milling facilities."

This change should be made throughout the Agreement (e.g., the first whereas clause on page 332, Article I B. on page 332, and Article II A.4 on page 332).

WDEQ Response:

Revision made throughout the application.

NRC Comment 24

On page 331 of 1080, Appendix A to Subsection 4.1.3 Wyoming is missing the following whereas clause that is found in the model draft agreement in M.D. 5.8

WHEREAS, the Commission and the State recognize the desirability of the reciprocal recognition of licenses, and of the granting of limited exemptions from licensing of those materials subject to this Agreement

It is necessary that Wyoming add this whereas clause before the last whereas clause in the draft agreement to be consistent with recognizing reciprocity of licensing between Wyoming, Other Agreement States, and the NRC

WDEQ Response:

Revision was made to Appendix A to Subsection 4.1.3.

NRC Comment 25

On page 332 of 1080, Article II, Section A.3, it states, "[B]yproduct material as defined in section 11e(4) of the Act;"

Add a period after the "e" to state "11e.(4)" instead of "11e(4)."

WDEQ Response:

Revision made to Article II of Section A.3 of the Draft Agreement.

NRC Comment 26

On page 332 of 1080, Article II, Section A.5, it states, "[S]pecial nuclear materials in quantities not sufficient to form a critical mass;"

Remove the phrase "in quantities not sufficient to form a critical mass" since the NRC will retain authority over all special nuclear material in the State.

WDEQ Response:

Revision made to Article II, Section A.5 of the Draft Agreement.

NRC Comment 27

On page 332 of 1080, Article II, Section A.6, it states that the NRC will retain authority over "[T]he regulation of the land disposal of byproduct, excluding 11e.(2) byproduct material as defined in the Act, source, or special nuclear waste materials received from other persons."

Please clarify what this provision covers under the Agreement. Will Wyoming assume regulatory authority over the land disposal of 11e.(2) byproduct material? Please clarify this statement with regard to the scope of material defined in the Agreement

WDEQ Response:

Wyoming's limited agreement does not assume low level radioactive waste disposal, however uranium milling facilities do dispose of 11e.(2) byproduct material and can accept 11e.(2) byproduct material created offsite for disposal. The URP does not want authority over all low level disposal but the nature of the agreement requires disposal of 11e.(2) material. After discussion with NRC language was agreed upon and Article II, Section A.6 was revised to the satisfaction of the NRC.

NRC Comment 28

On page 333 of 1080, Article II, Section A.13, it states, "[T]he regulation of any independent commercial laboratory facility acquiring, owning, possessing, transferring, offering or receiving for transport, any byproduct materials as defined in Section 11e.(2) of the Act."

Please clarify whether the NRC or Wyoming will have regulatory authority over independent commercial laboratories that are handling source material involved with uranium milling. The current provision has NRC retaining authority over the laboratories that are only handling 11e.(2) material. Please clarify this statement with regard to the scope of material defined in the Agreement.

WDEQ Response:

Article II Section A.13 was revised to include language that was agreed upon by both the

State and the NRC.

NRC Comment 29

On page 333 of 1080, Article II, Section B.1, it states, "[P]rior to the termination of a State license for such byproduct material, or for any activity that results in the production of such material, the Commission shall have made a determination that all applicable standards and requirements pertaining to such material have been met."

Same comment as (17) above. Partial site release for ISR facilities is common. If an amendment to a future Wyoming materials license resulted in shrinkage of an ISR licensed boundary, the NRC review team should have the ability to review a partial site release to make a determination that all applicable standards and requirements pertaining to such material have been met consistent with SA-900. Please describe your process for handling partial site releases. Please include this as a part of Wyoming licensing procedures.

WDEQ Response:

See comment 17.

NRC Comment 30

On page 334 of 1080, Article II, Section C, it states, "[N]otwithstanding this Agreement, the Commission shall retain the authority over the decommissioning of all sites under Title II of the Uranium Mill Tailings Radiation Control Act of 1978 ("Title II Sites") in which the Commission has initiated or is undergoing review of a Long-Term Surveillance Plan, including but not limited to the following Title II Sites."

Article II C then states that the NRC will retain regulatory authority over 5 UMTRCA Title II sites in decommissioning (e.g., Bear Creek; Pathfinder, Lucky Mc Gas Hills; Umetco, Gas Hills; Western Nuclear Inc.; ExxonMobile, Highlands) where the NRC has reviewed the long-term plan but not terminated thelicense.

Article II C is inconsistent with the proposed limited Agreement approved by the Commission where Wyoming would assume regulatory authority over all UMTRCA Title II sites.

Please remove Article II C to be consistent with the limited agreement approved by the Commission.

WDEQ Response

After consultation with Nuclear Regulatory Commission (NRC), the Title II sites will be transferred to the State with a Memorandums of Understandings (MOUs) outlining the remaining reclamation and decommissioning requirements the WDEQ will be responsible for ensuring prior to termination. The MOU will help remove any duplicative efforts by NRC and WDEQ. References to the MOU will be included in the Final Agreement as shown in Appendix A of Section 4.1.3 of this application.

NRC Comment 31

On page 334 of 1080, Article II, Section D, it states, “[N]otwithstanding this Agreement, reclamation of the American Nuclear Corporation Site in Gas Hills, Wyoming shall…. the Commission shall retain authority over the decommissioning of the American Nuclear Corporation Site.”

Article II D is inconsistent with the proposed limited Agreement approved by the Commission where Wyoming would assume regulatory authority over all UMTRCA Title II sites.

Please remove Article II D to be consistent with the limited agreement approved by the Commission.

WDEQ Response

Comment resolved per NRC Commission decision (SECY 17-0081).

Subsection 4.2 – Regulatory Requirements Program Elements.

NRC Comment 32

On page 345 of 1080, Chapter 1, Section 2, it states, “[I]t is the purpose of these rules to state such requirements as shall be applied in the use of byproduct material and source material involved in the extraction and concentration of uranium and thorium in source material and ores at uranium and thorium milling facilities (referred throughout these rules as licensed material) such that the Department can ensure the protection of the public health and safety to all persons at, or in the vicinity of, the place of use, storage, or disposal.”

This provision is inconsistent with the Wyoming legislation under the provisions in Wyoming Statute 35-11-2001 and the AEA definition of byproduct material in Section 11e.(2).

Please revised the sentence to state “… extraction or concentration of uranium or thorium and the management and disposal of 11e.(2) byproduct material” to be consistent with the Wyoming legislation and the AEA definition of byproduct material in Section 11e.(2). These changes must be made throughout the document for consistency.

WDEQ Response:

The URP changed “uranium and thorium” to “uranium or thorium” throughout the rules. Additionally, the URP changed "extraction and concentration" to "extraction or concentration" throughout the Uranium Recovery rules. Finally, the URP added the term "management and disposal of byproduct material" throughout the rules as applicable, and specifically to Uranium Recovery rules Chapter 1, Sections 2 and 3 as suggested by the NRC.

NRC Comment 33

On page 345 of 1080, Chapter 1, Section 3, it states, “[E]xcept as otherwise specifically provided, these rules apply to all persons who receive, possess, use, offer and receive for

transfer, own, or acquire any byproduct material or source material from the extraction and concentration of source material at uranium and thorium milling facilities. Nothing in these rules shall apply to any person to the extent such person is subject to regulation not relinquished by the United States Nuclear Regulatory Commission (NRC). These rules do not govern the mining or removal of source material in its natural state."

This provision is inconsistent with the language in the Wyoming legislation under the provisions in Wyoming Statue 35-11-2001 and the AEA definition of byproduct material in Section 11e.(2).

Please revise the sentence to state, "… extraction or concentration of uranium or thorium…" to be consistent with the Wyoming legislation and the AEA definition of byproduct material in Section 11e.(2). Please also add "… and the management and disposal of 11e.(2) byproduct material….".

WDEQ Response:

See Comment 32.

NRC Comment 34

On page 368 of 1080, Chapter 1, Section 12(c), it states, "[A]dditional records requirements are specified elsewhere in these rules. If the record retention period is not specified, the record shall be maintained for a period of three years."

The NRC review team notes records are to be retained for three years, unless otherwise specified in these rules. The NRC review team was unable to verify where rules are located within the draft application that would require longer retention periods to be consistent with the NRC's regulatory requirements. Spill records are an example of records that must be maintained until license termination (i.e., a period that may exceed three years) for purposes of restoration and decommissioning in accordance with 10 CFR 40.36(f).

Pease identify other Wyoming regulatory provisions related to record retention and, if inconsistent with NRC requirements, make the appropriate revisions to these Wyoming regulations.

WDEQ Response:

The Uranium Recovery rules incorporate 10 C.F.R. § 40.36(f) by reference in Chapter 4, Section 3 of the Uranium Recovery rules.

NRC Comment 35

On page 369 of 1080, Chapter 2, Section 2, it states, "[T]he Department may inspect, enforce, and penalize both licensees and the unlawful possession; use, transfer, ownership or other such unpermitted handling of byproduct material and source material involved in the extraction or concentration of uranium or thorium at uranium or thorium facilities in accordance with these rules, the Act, and applicable state and federal laws."

Please revise the sentence to clarify that the Department has authorization over both licensees and non-licensees by adding the phrase "non-licensees for the" before "unlawful possession. The sentence should read, "[T]he Department may inspect, enforce, and penalize both licensees and the unlawful possession; use, transfer, ownership or other such unpermitted handling of byproduct material and source material involved in the extraction or concentration of uranium or thorium at uranium and thorium facilities in accordance with these rules, the Act, and applicable state and federal laws."

WDEQ Response:

The URP revised the following in to Chapter 2, Section 2 of the Uranium Recovery rules:

(a) [T]he Department may inspect, enforce, and penalize both licensees and non-licensees, ~~and~~ for the unlawful possession, use, transfer, ownership, or other such unpermitted handling of byproduct material and source material involved in the extraction or ~~and~~ concentration of uranium or ~~and~~ thorium facilities in accordance with these rules, the Act, and applicable state and federal laws.

NRC agreed that the change resolved NRC concerns.

NRC Comment 36

On page 370 of 1080, Chapter 2, Section 5(b), it states, "[L]icensee initiative for self-identification and correction of problems is encouraged. The Department will generally not issue Notices of Violations for a violation that:

a. Was identified by the licensee;
b. Results in low or *no* health and safety consequences;
c. Was documented , in writing, for review by the Department;
d. Was or will be corrected , including measures to prevent recurrence, within ninety (90) days, or another timeframe approved by the Department; and
e. Was not a violation that could reasonably be expected to have been prevented by the licensee's corrective action for a previous violation?"

Wyoming regulations provides a detailed listing for situations that would not generally receive a Notice of Violation. Such provisions would be better in guidance, such as an enforcement policy, to provide greater flexibility to the regulatory agency.

To aid the program, the NRC review team recommends deleting this section from the regulations and incorporating the above list in guidance.

WDEQ Response:

The URP revised the Uranium Recovery rules such that the reference to "management controls "were removed from Chapter 2, Section 5(c) as shown below:

(c) Licensees are not ordinarily cited for violations resulting from matters outside of their control, such as equipment failures that were not avoidable by reasonable quality assurance measures ~~or management controls~~. However, licensees are held responsible for

acts of their employees. Accordingly, the rules should not be construed to excuse personal errors.

With the removal of the management controls NRC staff agreed that the concern presented in Comment 36 are resolved.

NRC Comment 37

On page 370 of 1080, Chapter 2, Section 5(c) is missing. Please provide missing section.

WDEQ Response:

The URP corrected the formatting errors identified above.

NRC Comment 38

On page 370 of 1080, Chapter 2, Section 5 (d) states, "[L]icensees are not ordinarily cited for violations resulting from matters outside of their control, such as equipment failures that were not avoidable by reasonable quality assurance measures or management controls."

Wyoming regulations state that management controls would be listed as a reason for not citing a violation. Such provisions would be better in guidance, such as an enforcement policy, to provide flexibility to the regulatory agency.

To aid the program, the NRC review team recommends deleting this section from the regulations. Please also explain why equipment failures in these situations would not be ordinarily cited for violations because they are "outside" the control of the licensee.

WDEQ Response:

As this is a recommendation Wyoming considered the change, but after consideration felt it was in line with other Agreement States more specifically Utah and therefore no change was made. Since this is a recommendation the comment is considered resolved.

NRC Comment 39

On page 374 of 1080, Chapter 4, Section 1, it states, "[T]his Chapter establishes the criteria for issuance and terms of conditions upon which the Department may issue licenses to receive title to, acquire, own, possess, transfer, offer or receive for transport, or deliver any licensed material. This Chapter also governs the operation of facilities for handling and disposing of licensed material. This Chapter also provides requirements for decommissioning and the long-term care and maintenance of byproduct material. Unless otherwise specified, the requirements of this Chapter are in addition to, and not in substitution for, other applicable requirements of these rules."

This provision is inconsistent with the NRC regulations that also provides regulatory authority over the "use" of radioactive material. In 10 CFR 40.3, it states, "[A] person subject to the regulations in this part may not receive, possess, use, transfer, provide for long-term care, deliver or dispose of byproduct material of residual radioactive material."

Please add the word “use” before “transfer” such that it is consistent with NRC regulations. The sentence should read, “[T]his Chapter establishes the criteria for issuance and terms of conditions upon which the Department may issue licenses to receive title to, acquire, own, possess, use, transfer, offer or receive for transport, or deliver any licensed material.”

WDEQ Response:

To be consistent with the NRC regulations, the URP included the verb "use" as suggested throughout the rules as applicable. These changes resolved concerns presented by NRC

NRC Comment 40

General comment: Please add the word “use” before “transfer” such that it is consistent with NRC regulations (as referenced above in 10 CFR 40.3) throughout these documents. The related sentences should read, “[T]his Chapter establishes the criteria for issuance and terms of conditions upon which the Department may issue licenses to receive title to, acquire, own, possess, use, transfer, offer or receive for transport, or deliver any licensed material.”

WDEQ Response:

See comment 39

NRC Comment 41

On page 374 of 1080, Chapter 4, Section 2(b), it states, “[T]his Chapter governs byproduct material located at a site where milling operations are no longer active, if such site is not covered by the remedial action program of Title I of the Uranium Mill Tailings Radiation Control Act (UMTRCA) of 1978 (42 U.S.C. §§ 7901 *et seq.).* This Chapter does not establish criteria and procedures for the issuance of licenses for materials covered under Title I of UMTRCA of 1978, unless that program fails to accomplish the remedial action. Disposal at a uranium or thorium processing site of licensed material which is not byproduct material must not inhibit reclamation of the tailings impoundment or the ability of the United States Government to take title to the impoundment as long-term custodian.”

This requirement indicates that Wyoming can regulate UMTRCA Title I sites if the current program is failing in its remedial actions. This is in conflict with Wyoming’s statements in its draft 274b. Agreement which states that the NRC has regulatory authority over UMTRCA Title I sites.

Please revise this sentence so it is clear the NRC retains authority over UMTRCA Title I sites even if the remedial action fails. Please strike out the phrase “, unless that program fails to accomplish the remedial action.” The revised sentence should read, “[T]his Chapter does not establish criteria and procedures for the issuance of licenses for materials covered under Title I of UMTRCA of 1978.”
Chapter 4, Section 2(b) also states, “[D]isposal at a uranium or thorium processing site of licensed material which is not byproduct material must not inhibit reclamation of the

tailings impoundment or the ability of the United States Government to take title to the impoundment as long-term custodian." Please explain what licensable material Wyoming expects to regulate with regard to disposal at a uranium or thorium processing site which is not byproduct material. This material appears to be outside of the scope of material defined in the Agreement.

WDEQ Response:

The URP deleted Chapter 4, Section 2(b) of the Uranium Recovery rules and incorporated 10 C.F.R. Section § 40.2(a) by reference in Chapter 4, Section 3(a) of the rules. This revision as agreed upon by NRC resolves the concerns presented in Comment 41.

10 CFR 40.2(a)

(a) Prior to the completion of the remedial action, the Commission will not require a license pursuant to 10 CFR chapter I for possession of residual radioactive materials as defined in this part that are located at a site where milling operations are no longer active, if the site is covered by the remedial action program of title I of the Uranium Mill Tailings Radiation Control Act of 1978, as amended. The Commission will exert its regulatory role in remedial actions primarily through concurrence and consultation in the execution of the remedial action pursuant to title I of the Uranium Mill Tailings Radiation Control Act of 1978, as amended. After remedial actions are completed, the Commission will license the long-term care of sites, where residual radioactive materials are disposed, under the requirements set out in §40.27.

(b) The Commission will regulate byproduct material as defined in this part that is located at a site where milling operations are no longer active, if such site is not covered by the remedial action program of title I of the Uranium Mill Tailings Radiation Control Act of 1978. The criteria in appendix A of this part will be applied to such sites.

<u>NRC Comment 42</u>

On page 374 of 1080, Chapter 4, Section 4 is Wyoming's only regulatory section containing provisions regarding deliberate misconduct in the chapters covering the uranium recovery program. This section does not cover regulatory requirements in 10 CFR 40.10 or 71.8. In particular, the provisions do not reference Chapter 9 "Transportation," and the provisions do not contain a section regarding deliberate misconduct that is equivalent to 10 CFR 71.8.

Please either add deliberate misconduct regulatory provisions in Chapter 9 that are equivalent to 10 CFR 71.8 or revise the regulatory provisions in Chapter 4 to also be equivalent to 10 CFR 71.8 and then refer to these provisions in Chapter 9.

WDEQ Response:

URP has already incorporated 10 C.F.R. § 71.8 by reference in Uranium Recovery Chapter 9, Section 3(a) of the rules. After discussion the NRC agreed that this comment is resolved.

NRC Comment 43

On page 376 of 1080, Chapter 4, Section 6(a), it states, "[A]ny person is exempt from this Chapter to the extent that such person receives title to, acquires, owns, possesses, uses ; or transfers source material in any chemical mixture, compound, solution, or alloy in which the source material is by weight less than one-twentieth of one percent (0.05 percent) of the mixture, compound, solution, or alloy."

Please revise the sentence to be consistent with 10 CFR 40.13(a) to add language stating that the exemption does not apply to Australian-obligated source material, or byproduct materials as defined in this part 10 CFR 40.13(a) is Compatibility Category B. This program element has significant transboundary implications and the element should be essentially identical to the NRC's.

WDEQ Response:

The URP revised Uranium Recovery Chapter 4, Section 6(a) with the following changes. The change resolves the NRC concerns

> (a) Any person is exempt from this Chapter to the extent that such person receives title to, acquires, owns, possesses, uses, or transfers source material in any chemical mixture, compound, solution, or alloy in which the source material is by weight less than one-twentieth of one percent (0.05 percent) of the mixture, compound, solution, or alloy. The exemption contained in this paragraph does not apply to Australian-obligated source material, nor does it include byproduct materials as defined in these rules.

NRC Comment 44

On page 376 of 1080, Chapter Section 6(d), it states, "[T]he Department may, upon its own initiative or the application of an interested person, grant such exemptions from the requirements of this Chapter as authorized by law and, as determined by the Department, will not endanger life, property, the common defense and security, and is otherwise in the public interest."

Section 274m of the AEA, 42 U.S.C. § 2014(e)(2), as amended, and 10 CFR 40.14 requires that the NRC retain regulatory authority over common defense and security under 274b. Agreements. Please remove the phrase "common defense and security" such that the sentence states, "[T]he Department may, upon its own initiative or the application of an interested person, grant such exemptions from the requirements of this Chapter as authorized by law and, as determined by the Department, will not endanger life, property, and is otherwise in the public interest.

WDEQ Response:

The URP made the following revision to Uranium Recovery Chapter 4, Section 6.:

> *(d) The Department may, upon its own initiative or the application of an interested person, grant such exemptions from the requirements of this Chapter as*

authorized by law and, as determined by the Department, will not endanger life, property, ~~the common defense and security~~ and is otherwise in the public interest."

Additionally, all references in the rules to "common defense and security" were removed. The changes resolved the NRC concern.

NRC Comment 45

On page 376 of 1080, Chapter 4, Section 8(a), it states, "[A]n application for a specific license may be approved if the Department determines that: (i) The applicant is qualified by reason of training and experience, to use licensed material for the purpose requested in the subject application consistent with the governing statutes and rules and in such a manner as to minimize danger to public health and safety, or property; (ii) The applicant's proposed equipment, facilities, and procedures are adequate to minimize danger to public health and safety or property; (iii) The applicant satisfies the requirements listed in this Chapter; (iv) The issuance of the license will not be detrimental to the health and safety of the public; and (v) The applicant is financially qualified to conduct the licensed activity; including any required decontamination, decommissioning, reclamation, or disposal."

This provision is inconsistent with 10 CFR Part 40, Appendix A, Criterion 9 which was adopted by reference in the Wyoming regulations. Please revise to clarify that the application shall include a proposed decommissioning funding plan or a proposal certification of financial assurance for decommissioning, or refer to the financial assurance requirements in Chapter 6.

WDEQ Response:

The URP made the following changes to Uranium Recovery Chapter 4, Section 8(a):

(a) [A]n application for a specific license may be approved if the Department determines that: (i) The applicant is qualified by reason of training and experience, to use licensed material for the purpose requested in the subject application consistent with the governing statutes and rules and in such a manner as to minimize danger to public health and safety, or property; (ii) The applicant's proposed equipment, facilities, and procedures are adequate to minimize danger to public health and safety or property; (iii) The applicant satisfies the requirements listed in this Chapter; (iv) The issuance of the license will not be detrimental to the health and safety of the public; ~~and~~ (v) The applicant is financially qualified to conduct the licensed activity; including any required decontamination, decommissioning, reclamation, or disposal; and (vi) The applicant has satisfied the requirements of Chapter 6 of these rules.

NRC Comment 46

On page 381 of 1080, Chapter 4, Section 9(b)(xiv), it states, "[P]roposal of an acceptable form and amount of financial assurance in accordance with 10 CFR Part 40, Appendix A, Criterion 9; and the Department's rules;"

The NRC review team cannot determine that the "Department's rules" contain a provision

for a trust or standby trust as required by 10 CFR Part 40, Appendix A, Criterion 9. This provision appears to allow the Department to use a method other than a trust or standby trust for financial assurance.

Please reference the appropriate section of the Department regulations concerning the use of a trust or standby trust for financial assurance or provide a clarification that indicates licensees are required to use a trust or standby trust for financial assurance.

WDEQ Response:

Chapter 4, Section 3 of the Uranium Recovery rules incorporates 10 C.F.R. Part 40, Appendix A, Criterion 9 by reference and establishes the requirements for financial assurance. Criterion 9(i)(4) also provides for a standby trust which creates an inconsistency with current rules and regulations. In order to avoid inconsistencies within the WDEQ protocols, the URP revised the regulations such that 10 C.F.R. Part 40, Appendix A, Criterion 9(i)(4) is excluded from incorporation by reference.

Additionally, provisions prohibiting self-bonding can be found in Chapter 6 of the Uranium Recovery rules. This resolves NRC concerns.

NRC Comment 47

On page 382 of 1080, Chapter 4, Section 9, editorial comment: Letter (c) that occurs after (g) and before (h) appears out of order.

WDEQ Response:

Editorial change made.

NRC Comment 48

On page 386 of 1080, Chapter 4, Section 11(f)(v)(C), it states, "[I]f no residual radioactivity attributable to activities conducted under the license is detected or detectable residual radioactivity is below release criteria found in this Chapter, 10 CFR 40 Appendix A, or 10 CFR 20.1401 through 1404, the licensee shall certify in writing that no detectable radioactivity contamination was found or it was below release criteria (Department Form URP-314 or equivalent). The Department will notify the licensee, in writing, of the termination of the license."

Please provide clarification with regard to when Wyoming will require licensees to meet 10 CFR Part 20 equivalent clean up requirements and when Wyoming will require licensees to meet 10 CFR Part 40 equivalent clean up requirements, particularly with regard to when determination is being made for the release of equipment and structures with detectable contamination. Please specify which guidance documents you will be using to implement these requirements.

WDEQ Response:

The URP removed references to 10 C.F.R. Subpart E (20.1401 through 1404) from the Uranium Recovery rules. It is important to note that 10 C.F.R.§ 20.1401(a) specifically

excludes Uranium Recovery Operations.

NRC Comment 49

On page 391 of 1080, Chapter 4, Section 16(k), allows for an applicant to request a subsite or a portion of a licensed area be released for unrestricted use before full license termination. Please describe your process for handling partial site releases.

WDEQ Response:

See Comment 17.

NRC Comment 50

On page 398 of 1080, Chapter 6, Section 4(e), it states, "[P]rior to termination of a license, a licensee shall establish a fund adequate and sufficient to cover the payment of the cost for long-term care and monitoring pursuant to Criteria 9 and 10 of 10 CFR Part 40, Appendix A."

In 10 CFR Part 40, Appendix A, Criterion 9, it states, "[F]inancial surety arrangements must be established by each mill operator before the commencement of operations to assure that sufficient funds will be available to carry out the decontamination and decommissioning of the mill and site and for the reclamation of any tailings or waste disposal areas. The amount of funds to be ensured by such surety arrangements must be based on Commission-approved cost estimates in a Commission-approved plan, or a proposed revision to the plan submitted to the Commission for approval, if the proposed revision contains a higher cost estimate, for:"

In 10 CFR Part 40, Appendix A, Criterion 10, it states, "[I]f site surveillance or control requirements at a particular site are determined, on the basis of a site- specific evaluation, to be significantly greater than those specified in Criterion 12 (e.g., if fencing is determined to be necessary), variance in funding requirements may be specified by the Commission. In any case, the total charge to cover the costs of long-term surveillance must be such that, with an assumed 1 percent annual real interest rate, the collected funds will yield interest in an amount sufficient to cover the annual costs of site surveillance. The total charge will be adjusted annually prior to actual payment to recognize inflation. The inflation rate to be used is that indicated by the change in the Consumer Price Index published by the U.S. Department of Labor, Bureau of Labor Statistics."

Please add language stating that the NRC approves the long-term care fee.

WDEQ Response:

The URP made the following change to Chapter 6, Section 4(e) of the Uranium Recovery rules:

> ***(e)*** Prior to termination of a license, a licensee shall establish a fund adequate and sufficient to cover the payment cost for long-term care and monitoring, the amount of which shall be approved by the NRC, pursuant to Criteria 9 and 10 of 10 C.F.R Part 40, Appendix A.

NRC Comment 51

On page 400 of 1080, Chapter 6, Section 7(a)(iv), it states, "[F]or sites decommissioned in accordance with 10 CFR 20.1403, 20.1404, and 10 CFR Part 40, Appendix A. Cost estimates for long-term care subsequent to license termination must be sufficient to enable the Department or the DOE to…."

This section inappropriately mixes 10 CFR Part 20 and Part 40 cleanup requirements with regard to cost estimates for long-term care subsequent to license termination.

Please remove the references to the 10 CFR Part 20 requirements.

WDEQ Response:

See Comment 48

NRC Comment 52

On page 400 of 1080, Chapter 6, Section 7(a)(v), it states, "[U]pon the determination by the Department that disposal, decommissioning, and decontamination requirements have been satisfied, the Department shall transfer the custody of the site and any funds for long-term care to the appropriate regulatory agency assuming long-term care and custody. Such funds include, but are not limited to, sums collected for long-term care and maintenance (i.e., continued site observation, monitoring, and necessary maintenance). Such funds do not include monies held as surety where no default has occurred and the required reclamation or either bonded activity has been performed."

This provision indicates that Wyoming determines the acceptability of the site and transfers the site to the DOE, which is contrary to Section 274c. of the AEA, 42 U.S.C. § 2014(e)(2), as amended. The NRC must approve the State's conclusion and establish the Long-Term Care Fee.

Please revise the above regulation to specify that NRC must approve the State's conclusion and establish the Long-Term Care Fee.

WDEQ Response:

The URP made the following change to Chapter 6, Section 7(a) of the Uranium Recovery rules:

> *(v) Upon the determination by the Department that disposal, decommissioning, and decontamination requirements have been satisfied, and after the NRC has approved the Department's determination, the Department shall transfer the custody of the site and any funds for long-term care to the appropriate regulatory agency assuming long-term care and custody. Such funds include, but are not limited to, sums collected for long-term care and maintenance (i.e., continued site observation, monitoring, and necessary maintenance). Such funds do not include monies held as surety where no default has occurred and the required reclamation or either bonded activity has been performed.*

The NRC agrees that the changes resolve concerns presented in comment 52

NRC Comment 53

On page 401 of 1080, Chapter 7, Section 2(a)(i), it states, "[A]n applicant for or holder of a specific byproduct or source material license issued by the Department pursuant to Chapter 4 of these rules or by the NRC and recognized by the Department;and"

The regulation appears to be inconsistent with the NRC regulatory requirements with regard to reciprocity that Agreement States must recognize other licenses issued by Agreement States. Please revise the provision by deleting "and recognized by the Department" and replace with "another Agreement State," to clarify recognition of other Agreement State licenses.

WDEQ Response:

The URP made the following change to Chapter 7, Section 2(a)(i) of the Uranium Recovery rules:

> *(a)(i) An applicant for or holder of a specific byproduct or source material license issued by the Department pursuant to Chapter 4 of these rules, the NRC, or another Agreement State ~~and recognized by the Department~~;*

The NRC agrees that the changes resolve concerns presented in comment 53

NRC Comment 54

On page 402 of 1080, Chapter 7, Section 4(c), it states, "[I]ndirect costs will be calculated and allocated to licensees and the Program using the rates and basis for application detailed in the Cognizant Agency Negotiation Agreement, negotiated between the Department and the federal government. Indirect Costs are applied to both Site Specific and Non-Site specific DirectCosts."

Please explain how the Cognizant Agency Negotiation Agreement affects the funding of the Agreement program.

WDEQ Response:

The Cognizant Agency Negotiation Agreement is not a Compatibility requirement and has no bearing on the Agreement between the NRC and Wyoming. The Cognizant Agency Negotiation Agreement is a tool used by the Department to calculate the amount of indirect costs to charge for supporting functions such as accounting or human resources. As such, the above recommend actions suggested by the NRC will not be considered pertinent for review.

NRC Comment 55

On page 405 of 1080, Chapter 8, to aid the program, the NRC review team recommends

deleting this chapter regarding risk informed, performance based licensing and inspection and having this information contained in a guidance document to allow the regulatory agency greater flexibility in implementation. Please see NUREG-1569 “Standard Review Plan for In Situ Leach Uranium Extraction License Applications” and NUREG/CR-6733 “A Baseline Risk-informed, Performance-Based Approach for In Situ leach Uranium extraction Licensees” as examples of how the NRC uses risk informed, performance based licensing and inspection in guidance. As a part of guidance this can be periodically revised and updated.

WDEQ Response:

The URP appreciates this comment. However, the URP will maintain Chapter 8 of the Uranium Recovery rules to ensure the regulatory enforceability of risk-informed, performance based licensing and inspection.

NRC Comment 56

On page 410 of 1080, Chapter 9, see prior comments (comment 42) on the need to have an equivalent provision to 10 CFR 71.8 regarding deliberative misconduct.

WDEQ Response:

See comment 42.

NRC Comment 57

On page 412 of 1080, Chapter 10, Section 2(a), it states, “[T]he Department fully adopts and hereby incorporates by reference 10 CFR §§ 40.20, 40.21, 40.22, and 40.26, revised as of January 1, 2016, unless expressly provided otherwise in these rules. These rules do not include any later amendments or editions of the incorporated matter.”

The NRC review team notes that 10 CFR 40.20 includes references to 10 CFR 40.27 and 10 CFR 40.28, which Wyoming is not adopting. Wyoming is not requesting to assume regulatory authority over all the types of facilities referenced in 10 CFR 40.22.

Please revise the sentence to delete reference to 10 CFR 40.20 and make the appropriate revisions regarding 10 CFR 40.22.

WDEQ Response:

The General Licenses provisions contained in Chapter 10 of the URP regulations will be removed and NRC will retain all authority over general licenses as it relates to the scope of the material contained in the Agreement between NRC and WDEQ.

NRC Comment 58

On page 414 of 1080, Chapter 11, this Chapter of Wyoming's regulations does not appear to have integrated Wyoming's implementation on NRC regulatory requirements. For example, Chapter 11 consistently uses the term "permit" and "Research and Development Testing License." The issuance of a permit is for mining. A Research and Development

Testing License does not appear to be equivalent to a radioactive material license. There is little mention of the uranium recovery program material license or any aspect of radiation protection in this chapter. Comment 58-61 address some specific issues regarding the applicability of Chapter 11 to the Agreement State program.

The NRC review would like to schedule a meeting with the State to discuss this matter further.

WDEQ Response:

Comment 58 is similar to Comment 1 and the response to Comment 1 is applicable to this response as well. To further clarify Non Coal Chapter 11 outlines requirements to obtain a permit to mine. While in situ uranium recovery operators comply with Chapter 11 as part of their permit to mine requirements, the source material license is different and separate process requiring adherence to a separate process. There are no differences from the regulatory requirements required currently between the NRC and the WDEQ.

NRC Comment 59

On page 416 of 1080, Chapter 11 Section 1(j), "Groundwater restoration" states this means as defined in W.S. § 35-11-103(f)(iii)

The NRC review team notes that Wyoming's definition of groundwater restoration appears to be inconsistent with 10 CFR Part 40, Appendix A, Criterion 5.

The comment is related to comment 7 under Legal Elements. Please revise this definition to be consistent with 10 CFR Part 40, Appendix A definitions.

WDEQ Response:

Please see response to Comment 7.

NRC Comment 60

On page 426 of 1080, Chapter 11, Section 5(a)(ii), it states, "[T]he information necessary to demonstrate that the operation will achieve the standard of returning all affected groundwater to the pre-mining class of use or better using Best Practicable Technology, in accordance with the following provisions.

The NRC review team notes the Wyoming regulation allows returning all affected groundwater to the pre-mining class of us, which is inconsistent with the restoration criteria in 10 CFR Part 40, Appendix A, Criterion 5.

Please revise this section to be consistent with 10 CFR Part 40, Appendix A, Criterion 5, 10 CFR Part 40, Appendix A is Compatibility Category A, which requires the State Program element to be essentially identical to that of NRC.

WDEQ Response:

Please see response to Comment 7.

NRC Comment 61

On page 427 of 1080, Chapter 11, Section 5 (a)(ii)(D), it states, "[Regardless of the restored groundwater quality in the production zone, the adjacent aquifers and other waters within the same aquifer must be fully protected to their class of use and outside the aquifer exemption boundary, to applicable Maximum Contaminant Levels from the U.S. Environmental Protection Agency Rules (40 CFR 141, as amended July 1, 2001)" and Section 5(a)(ii)9E) state, "[I]f the operator demonstrates the application of Best Practicable Technology to the satisfaction of the Administrator, but is unable to achieve pre-mining class of use, then the operator can."

The NRC review team notes the Wyoming regulations allows returning all affected groundwater to the pre-mining class of use, which is inconsistent with the restoration criteria in 10 CFR Part 40, Appendix A, Criterion 5

Please revise this section to be consistent with 10 CFR 40, Appendix A, Criterion 5. 10 CFR Part 40, Appendix A is Compatibility Category A, which requires the State Program element to be essentially identical to that of the NRC.

WDEQ Response:

The WDEQ does not believe there is conflict between State regulations and NRC required regulations. Please refer to Comment 7 for explanation.

NRC Comment 62

On page 448 of 1080, Chapter 11, Section 15(b) and (c), Section 15(b) discusses required quarterly reports and Section 15(c) discusses an annual report. The NRC review team notes that there is no mention of Semi-Annual Effluent Reports and their content as required by 10 CFR Part 40.65 "Effluent monitoring reporting requirements.

Please provide a clarification and make appropriate revisions to the regulations. The compatibility category of 10 CFR 40.65 is Compatibility Category C, where the State Program element should adopt the essential objectives if the NRC regulation to avoid conflicts, duplication and gaps.

WDEQ Response:

The requirements in the mentioned Non Coal Chapter 11 Section 15(b) and (c) are requisite as a result of obtaining a permit to mine with the State. The requirements of 10 CFR Part 40.65 are unique to the Source Material license and therefore the equivalent regulation is found in the Uranium Recovery rules Chapter 4. The language is identical to the 10 CFR Part 40.65 and NRC has already reviewed the Chapter 4 regulation and found it adequately addressed the 10 CFR 40.65 reporting requirements. After further discussion with NRC the comment has been resolved.

NRC Comment 63

On page 459 of 1080, Guideline No. 4, In Situ Mining, Noncoal. The NRC review team provides the following general comments on Guideline No. 4 as submitted in the Wyoming

Agreement State application. While Guideline No. 4 provides comprehensive guidance on review for a Permit to Mine application, the guidance does not reference any uranium recovery program guidance for reviewing a license application for radioactive materials.

In general, there is no discussion of ground water restoration standards in the production zone that reference 10 CFR Part 40, Appendix A. Guideline No. 4 also has multiple references to class of use standards as a consideration for groundwater restoration if background concentrations cannot be met with best practicable technology, which is not compatible with 10 CFR Part 40, Appendix A, Criterion 5. A licensee can only apply for an ACL as a restoration standard if background or MCLs cannot be met.

There does not appear to be any incorporation of radiation protection standards into the guidance in Guideline No. 4. For example, checklists do not appear to have any reference or guidance pertaining to radiation protection and there is no discussion of semi-annual reporting. It appears that the language in Guideline No. 4 was taken from guidance for the Underground Injection Control Program, and a comprehensive incorporation of uranium recovery program guidance will be needed. In order to be able to effectively implement Guideline No. 4 with regard to the regulation of uranium and thorium milling, additional work will be required to incorporate the provisions on 10 CFR Part 40.

WDEQ Response

The Purpose for Guideline 4 is to provide a licensing guideline for applications that come into the department for a source material license and permit to mine. Items necessary for a source material license that were missing from the Wyoming permit to mine process were added to the guidance. Guideline 4 will be a comparable document to NUREG 1569 and information from 1569 has been incorporated into the guidance. It's important to note NUREG 1569 contains no references to 10 CFR 40 App A criterion 5b(5), MCL or ACL. As discussed in Comment 7 the distinction between a permit to mine and a source material license is important and will be a separate permissions. The requirements found in 10 CFR 40 App A, Criterion 5 are required for a source material license as they were incorporated verbatim in Uranium Recovery regulations Chapter 4. In evaluating compliance to the standard Wyoming will use applicable NRCguidance to determine adherence to required standards.

<u>NRC Comment 64</u>

On page 527 of 1080, Guideline No. 4, In Situ Mining Noncoal, the checklist does not provide sufficiently detailed information to be useful. In particular, the sections of the checklist under Part IV, Restoration/Reclamation Plan need more detail.

Please revise the document to provide additional details in the checklist. To aid the program, Wyoming may find the checklist in NUREG-1727 useful in responding to this question. The checklist in NUREG-1727 is more complete and is useful to regulators with regard decommissioning activities.

WDEQ Response

The WDEQ has developed a more comprehensive checklist covering information needed within an application (equivalent to NUREG 1569). Additionally the WDEQ has

developed additional checklists for decommissioning (equivalent portions of NUREG 1727). Please refer to Appendices C and D of Section 4.3 of this application.

NRC Comment 65

On page 665 of 1080, Appendix B to Subsection 4.2, Wyoming indicates that it is including as a part of their regulations 10 CFR 20.1401- 20.1406 (10 CFR Subpart E). Please clarify whether this section is referencing 10 CFR Part 20 Subpart E to be used for non-11e.(2) byproduct material contamination of a building or process equipment on a site.

WDEQ Response

References to 10 CFR 20.1401-1406 have been removed from the application.

Subsection 4.3 - Licensing Program Elements

NRC Comment 66

On page 751 of 1080, General Comment: Licensing Procedural Manual Uranium Recovery Program (Licensing Manual), the introduction section references NUREG-1757. All aspects of this document do not apply to uranium recovery facilities. In NUREG-1757, Volume 3, Revision 1, under Section 1.1 Purpose and Applicability, it states, "[T]his volume applies to the timeliness and recordkeeping requirements for licensees under Title 10 of the *Code of Federal Regulations* (10 CFR) Parts 30, 40, 70, and 72. It also applies to financial assurance requirements for licensees under 10 CFR Parts 30, 40, 70, and 72, with the exception of licensees (uranium recovery facilities) subject to Criteria 9 and 10 of Appendix A, 'Criteria Relating to the Operation of Uranium Mills and the Disposition of Tailings or Wastes Produced by the Extraction or Concentration of Source Material From Ores Processed Primarily for Their Source Material Content,' to 10 CFR Part 40, 'Domestic Licensing of Source Materials.'"

The reference to NUREG-1757 with regard to financial assurance requirements for licensees under 10 CFR Parts 30, 40, 70, and 72 should be removed from this section.

WDEQ Response

In NUREG 1757 Volume 2 Page 1-1 it state "[U]ranium recovery facilities may find this information useful, but they are not subject to Subpart E." Some of the information contained in NUREG 1757 Volume 1-3 may be helpful and therefore the language has been modified to accept only applicable section of NUREG 1757. Additionally language was added to point out the financial assurance portions explicitly exclude uranium recovery operations.

NRC Comment 67

On page 752 of 1080, Licensing Manual, Section 2.1, it states "[T]he license review is designed to assure that the uses of, and authorizations for, licensed material will not present a hazard to the general public or the workers." The appropriate standard with regard to regulatory language is "adequate to protect public health and safety of the general public and workers" instead of "not present a hazard."

The NRC review team recommends revising the sentence to read, “[T]he license review is designed to assure that the uses of, and authorizations for, licensed material will be adequate to protect the public health and safety of the general public and workers.”

WDEQ Response

The suggested change has been made to Section 2.1 of the Licensing Manual.

NRC Comment 68

On page 752 of 1080, Licensing Manual, Section 2.4, it states, “[T]he license review is done by at least two persons: a main technical staff reviewer and a secondary peer staff reviewer.”

The NRC review team agrees that the above arrangement is typical in many technical reviews. However, more complex reviews may require two or three main technical reviewers (e.g., a hydrologist, health physicist (HP), and geotechnical engineer). A lead technical reviewer may be responsible for coordinating requests for information or writing a draft version of the licensing action, but the lead technical reviewer will need assistance in areas outside their expertise.

To aid the program, the NRC review team recommends the Wyoming’s procedures be revised to include language that clarifies the need to have sufficient technical expertise for each licensing action particularly for more complex actions.

WDEQ Response

The language was changed to state that the license reviewers will rely on other division staff for their expertise and aid.

NRC Comment 69

On page 755 of 1080, Licensing Manual, Section 3.0 needs additional review and revision. For example, Section 3.8 (a) (2) states, “[A]pplication meets the technical requirements contained in Chapter 4 and Guideline 4.”

The NRC review team notes that Guideline No. 4 has not been updated for the review of radioactive materials and has not been updated to incorporate radiation protection standards. Additionally, the regulations in Chapter 4 do not provide clear guidance for a comprehensive technical review for Agreement materials. While there are references listed in the “Licensing Procedure Manual," Section 1.0, Introduction, there is little specific guidance or criteria as to which documents to use for review of radioactive materials or radiation protection. The templates and checklists provided on page 770 of 1080 (Licensing Manual Appendix A) and on page 771 of 1080 (Licensing Manual Appendix B) do not appear adequate for a complex review.

Please provide additional information to address these concerns. You may find the checklists in NUREG-1727 useful in responding to this question.

WDEQ Response

Checklist have been developed to cover both the application and decommissioning requirements. These checklists are provided in Appendices C and D of Section 4.3 of this application.

NRC Comment 70

On page 754 of 1080, Licensing Manual, Section 3.1, there is no mention of the option to request additional information from the applicant, if any is required.

To aid the program, the NRC review team recommends revising this document to specifically mention of the staff's ability to request additional information from the applicant between 3.1(d) and (e) in the Licensing Manual. This is good regulatory practice.

WDEQ Response

The language recommended by NRC has been added to Section 3.1(d) of the Licensing Manual.

NRC Comment 71

On page 754 of 1080, Licensing Manual, Section 3.2, it states "[T]he reviewers should also assess if a pre-licensing inspection is necessary for the license application."

Technically, the program does not carry out "inspections" until after a license is issued and does pre-licensing on-site visits.

For consistency with terms used by the NRC, the NRC review team recommends that this sentence be revised to state, "[T]he reviewers should also assess if a pre- licensing on-site visit is necessary for the license application." Corresponding changes should be made throughout the document (e.g., the Licensing Review Checklist in Appendix B). Guidance on pre-licensing on- site visits can be found in NUREG-1556, Volume 20, "Guidance on Administrative Licensing Procedures." This comment is related to comment 14.

WDEQ Response

WDEQ understands the comment presented by the NRC on pre-licensing visits but the State is and has allowed inspections to occur prior to licenses/permits being issued. Wyoming will continue to refer to pre-licensing visits as inspections and NRC has affirmed that as long as the State has the authority to inspect before issuance of license/permit that the comment will be resolved. The URP appreciates the recommendation.

NRC Comment 72

On page 757 of 1080, Licensing Manual, Section 3.11 does not discuss coordination with the DOE or the NRC. The procedure also does not mention the development of a Completion Review Report which is inconsistent with the process as described in SA-900.

Wyoming needs to revise the procedure for termination of licenses to capture the license termination process as it is described in SA-900.

WDEQ Response

NRC document SA-900 was added to the references in Section 1.0 of the Licensing Procedures Manual. Additionally, Section 3.11 was modified such that the termination process and the Completion Review Report will be in accordance with SA-900. Lastly, language describing interactions between NRC and DOE was added in Section 3.11 (f).

NRC Comment 73

On page 760 of 1080 Licensing Manual, Section 4.0 in its entirety needs to be reviewed for consistency with 10 CFR Part 40 and rewritten because it incorrectly mixes Part 40 and Part 20 cleanup requirements and omits many of the requirements of Part 40. It should be noted that uranium recovery sites are not subject to 10 CFR Part 20 Subpart E cleanup requirements.

It is necessary that Wyoming indicates in the regulations with regard to when Wyoming will require licensees to meet 10 CFR Part 20 equivalent clean up requirements and when Wyoming will require licensees to meet 10 CFR Part 40 equivalent clean up requirements, particularly with regard to when determination is being made for the release of equipment and structures with detectable contamination. Please specify the guidance documents you will be using to implement these requirements.

WDEQ Response

The 10 CFR 20 cleanup requirements in Subpart E have been removed from the application.

NRC Comment 74

On page 761 of 1080, Licensing Manual, Section 4.2 where the Components of a Decommissioning Plan are addressed, the discussion included is more appropriate for a non- milling site and inconsistent with NUREG-1757. The information is incomplete. A more complete set of guidance would be more helpful in aiding Wyoming with regard to the review of decommissioning plans and other information to support the decommissioning of licensed facilities.

In order to aid the program, please revise this section so it is consistent with NUREG-1757.

WDEQ Response

Applicable elements of 1757 have been included into the application for review of decommissioning plans.

NRC Comment 75

On page 762 of 1080, Licensing Manual, Section 4.5, the information provided in this

section is not applicable to milling sites because the requirements in 10 CFR Part 20.1403 and 20.1404 do not apply to uranium recovery sites.

Please provide clarification with regard to when Wyoming will require licensees to meet 10 CFR Part 20 equivalent clean up requirements and when Wyoming will require licensees to meet 10 CFR Part 40 equivalent clean up requirements, particularly with regard to when determination is being made for the release of equipment and structures with detectable contamination. Please specify the guidance documents you will be using to implement these requirements.

WDEQ Response

References to 10 CFR 20.1403-1404 have been removed, and the reference to 10 CFR 40, Appendix A has been added to this section.

NRC Comment 76

On page 762 of 1080, Licensing Manual, Section 4.6, the NRC review for license termination is not identified. This review is required and needs to be referenced in Wyoming procedures. Additionally, there is no mention of the NRC review for partial site decommissioning or partial site release.

Wyoming needs to revise the licensing manual to include NRC review of partial license terminations in site decommissioning. NRC provides guidance on license termination (including partial license terminations) in SA-900.

WDEQ Response

Section 4.6 of the Licensing Manual was updated to reference NRC involvement for partial site decommissioning and partial releases. Section 4.6 was also updated with a cross-reference to Section 3.11(f) of the Licensing Manual to point the reader to the procedures for the Completion Review Report (CRR) and NRC determinations.

NRC Comment 77

On page 764 of 1080, Licensing Manual, Section 4.7(d), it states, “[T]hree- to four- foot thick soil covers over contaminated soil, slag, or tailing piles are also generally acceptable.”

The NRC review team recommends that Wyoming revise the licensing manual to be consistent with 10 CFR Part 40, Appendix A, Criterion 6 which is Compatibility Category C. 10 CFR Part 40, Appendix A, Criterion 6 requires that a designed engineered barrier should be used when disposing of waste by-product material.

Please revise the Wyoming procedures accordingly.

WDEQ Response

The language has been modified in Sections 3.3 and 4.7(d) to include engineered barriers.

NRC Comment 78

On page 765 of 1080, Licensing Manual, Section 4.7(h)(2), the NRC review team notes the reference to "complex materials site" in this chapter is the only instance where this term is used in the draft application.

NRC staff has provided guidance in Regulatory Issue Summary 2014-08, Revision 1 (ML15181A223) with regard to how the NRC defines the term "complex materials facility." Please clarify or define the term "complex materials site" and ensure that your definition is consistent with RIS 2014-08, Revision 1.

WDEQ Response

The phrase "complex materials site" has been replaced with "uranium recovery facility".

NRC Comment 79

On page 767 of 1080, Licensing Manual, Section 7.0 appears to be inconsistent with the procedures listed in Section 3.0, "Procedures for Handling License Actions." For example, there is no discussion of Phase I or Phase II reviews.

In order make the Licensing Manual a more effective tool for the program, the NRC review team recommends resolving the discrepancies between Section 3.0 and Section 7.0.

WDEQ Response

Section 7.1 was removed as it was redundant and sometimes conflicting with section 3. Section 3 was updated to include any information from the former section 7.1 that it did not already contain. Section 7 was changed to only consist of "Transfer of NRC licenses to the State of Wyoming URP."

NRC Comment 80

On page 770 and 771 of 1080, Licensing Manual, Appendix A and Appendix B are not as complete when compared to other guidance documents, such as Guideline No. 4 and NUREG-1569 "Standard Review Plan for New ISR Applications." The documents in Appendix A and B provides minimal review guidance for a new complex uranium recovery facility application.

Please revise Appendix A and B to include additional information for a license reviewer. You may find NUREG-1569 "Standard Review Plan for New ISR Applications" useful in revising these appendices.

WDEQ Response

Guideline 4 has been modified to include requirements for source material license applications. Also included in Guideline 4 is a statement that the Division will utilize applicable review procedures and acceptance criteria found in NUREG 1569 for information uniquely required for uranium or thorium recovery facilities. Refer to Appendices C and D of Section 4.3 of this Application.

Subsection 4.4 – Inspection Program Elements

NRC Comment 81

On page 781 of 1080, Appendix A to Subsection 4.4, should include the following references: Inspection Procedure 88045, Effluent Control and Environmental Monitoring; Inspection Procedure 88035, Radioactive Waste Processing, Handling, Storage, and Transportation; Inspection Procedure 88030, Radiation Protection; and Inspection Procedure 88005, Management Organization Controls.

WDEQ Response

The references are contained in URP-001 Table 1. Additionally the references have been added to URP-003, Section 4.

NRC Comment 82

On page 829 of 1080, Inspection Procedure (URP-003) Section 4.0 includes reference to NUREG/BR-0241. This document has been superseded by NUREG- 1727, NUREG-1757, and MARSSIM.

Please delete reference to NUREG/BR-0241, and replace it with a reference to NUREG- 1727, NUREG-1757, and MARSSIM.

WDEQ Response

The references have been updated and deleted as requested in URP-003, Section 4.

NRC Comment 83

On page 850 of 1010, Uranium Recovery Inspection Procedure (URP-05) Section 6, "Other Inspection Sampling Processes," please include procedures to specify how field samples of soil or water will be taken, handled, packaged and shipped for analysis.

WDEQ Response

The URP has added to URP-05, Section 6 to address NRC concerns. These procedures may need to be altered to meet the objectives of each sampling mission. Additionally, the URP will rely on NRC, other agreement state, and other government agencies inspection procedures in the development of sampling plans.

Subsection 4.5 - Enforcement Program Elements

NRC Comment 84

On page 859 of 1080, Appendix A to Subsection 4.5, Section 2.1.2, it states "[A]n inspection letter is issued at the conclusion of an inspection to document the occurrence of the inspection." However, "inspection letters" are not specifically mentioned in the Inspection Procedures provided in Subsection 4.4 "Inspection Program Elements."

For consistency, in order to help the Wyoming inspection program, the NRC review team recommends that Wyoming revise the Inspection Procedures to specifically mention issuance of inspection letters to document the occurrence of an inspection.

WDEQ Response

A sentence has been added to Paragraph 1 of Section 11 "Post Inspection Activities" of Section 4.4 "Inspection Program Elements" to the effect that "An inspection letter/report will be issued to document the occurrence of the inspection". Please note that the requirements for the body of the report may be found in Section 3.0 of Attachment A, "Narrative Report Format" within Section 4.4 "Inspection Program Elements".

NRC Comment 85

On page 859 of 1080, Appendix A to Subsection 4.5, Wyoming has provided information on their proposed enforcement program. These enforcement elements should include the following:

Wyoming should have enforcement procedures for ensuring the fair and impartial administration of regulatory law.

a. Wyoming should scale the actions to the seriousness of the violation.

WDEQ Response: The URP added appropriate language under Sections 2.0, "Enforcement Action" and 3.0, "Escalated Enforcement" to address the concern.

b. The procedures should establish standard methods of communicating sanctions to the licensee. Wyoming should give written notice using standardized wording and format. Legal counsel should review the wording and format.

WDEQ Response: The standard methods of communicating sanctions to a licensee are described in Section 2.1 through 2.4, The Wyoming Attorney General's Office will be involved in enforcements for tracking the completion of enforcement actions.

c. The procedures should include a means for tracking the completion of enforcement actions.

WDEQ Response: The URP added Section 2.1.6 "Enforcement Tracking" describing how enforcement actions will be tracked.

For serious or repeated violations of regulatory requirements, the program should use escalated enforcement. Escalated enforcement actions may include:

a. Administrative or civil monetary penalties;
b. The modification, suspension, or revocation of the license;
c. Referral for criminal prosecution.

WDEQ Response: Escalated enforcement will be governed by Wyoming Statutes, the URP's rules and regulations, and Section 3.0 through 3.3.

Wyoming needs to submit procedures for escalating enforcement actions.

a. Wyoming should scale the sanctions in escalated enforcement cases to the seriousness of the violation. The sanctions should be more serious than routine enforcement.

WDEQ Response: Wyoming will scale sanctions in enforcement actions dependent on the seriousness of the violations. Please see Wyoming Statutes, the URP's rules and regulations, and Section 3.0 through 3.3.

b. The procedures should address notifying the licensee of proposed escalated enforcement actions. The notice should be written, using standard wording and format when practical.

WDEQ Response: The URP will notify licensees of escalated enforcement. Please see Section 3.0.

c. The enforcement program element manager, or higher, should sign the notices of escalated enforcement.

WDEQ Response: Please see Section 3.0.

d. Escalated enforcement actions should be coordinated with legal counsel.

WDEQ Response: Escalated enforcement actions will be coordinated with legal counsel pursuant to Sections 3.0 through 3.3.

Wyoming needs to address the above comment in their enforcement procedures by providing additional detail. The following references can assist the State:

a. Criteria Policy Statement, criteria 1, 18, and 23
b. NUREG-1600, NRC Enforcement Policy
c. NRC Inspection Manual Chapter 2800 and 2801

WDEQ Response: References were reviewed and added to Section 1.4, “References”.

Subsection 4.6 - Technical Staffing and Training Program Elements

<u>NRC Comment 86</u>

On page 868 of 1080, Subsection 4.6.1, the paragraph before Table 1 states that Wyoming determined staffing needs based upon an available 1704 hours per employee per year. In comparison, the NRC uses approximately 1430 productive hours per full time employee (FTE) for NRC headquarters staff (See 80 FR 37432 and 81 FR 41171).

The NRC review team recommends that Wyoming confirm that 1704 hours per FTE is the appropriate figure used for the NRC review teams budgetary and resource analyses of the Wyoming program.

WDEQ Response

The 1704 hours per FTE is the appropriate number for budgetary projections for the State of Wyoming. To aide NRC in the comparison of budget resources Wyoming will provide the FTE and the equivalent hours depending on the whether it's the NRC or the WDEQ.

NRC Comment 87

On page 868 of 1080, Subsection 4.6.1, the second paragraph after Table 1 states that the WDEQ predicts 0.5 FTE/yr. for "major licensing actions" (e.g., new licensing actions.) The NRC analysis for the Jane Dough application estimates approximately 0.77 FTE/yr. for new licensing (safety licensing only, not environmental). Since licensing actions undertaken by Wyoming need to include environmental written analysis and potential hearings required under Section 274o. of the Act, please confirm or revise Wyoming's estimation of time needed for new licensing actions.

WDEQ Response

The WDEQ increased the projected FTE calculation from 0.5 FTE (852 hours) to 1 FTE(1704 hrs) to appease the comment above. This is 549 hours above what NRC projected in the comment for the Jane Dough amendment 0.77 FTE (1,155 hrs.). This was done to accommodate for the State's environmental review and possible hearings. The URP will project one major licensing action per year. See Tables 2 and 4 of Subsection 4.6.1.

NRC Comment 88

On page 869 of 1080, Subsection 4.6.1, it states that Wyoming will set aside 0.4 FTE for staff to work on decommissioning sites and sites on standby. The review team concludes this amount of effort does not appear adequate to regulate all decommissioning sites.

Wyoming will need to provide additional information that demonstrates adequate FTE to support the decommissioning of the following sites.

1. Anadarko Bear Creek, Powder River Basin;
2. Pathfinder, Lucky Mc, Gas Hills;
3. Umetco Minerals Corporation, Gas Hills;
4. Western Nuclear Inc., Split Rock, Jeffrey City;
5. Exxon Mobile, Highlands, Converse County; and
6. American Nuclear Corporation.

Please revise your estimate to include the decommissioning sites. The NRC has provided Wyoming with an estimate of the amount of work needed for each of the decommissioning sites.

WDEQ Response

The FTE calculation was revised to accommodate the licensees undergoing decommissioning as displayed in Tables 3 and 4 of Subsection 4.6.1. Revisions included dedicating roughly 0.16 FTE (269 hrs.) to inspections and 1.4 FTE (2,387 hrs.) for project management and license review.

This equates to 0.2 FTE to each site for project management and review. Review of resources spent on uranium facilities in Wyoming (provided to WDEQ by NRC April 23 2013) indicates the resources spent collectively on four Title II sites as the following; 2011(0.41 FTE or 563 hours), 2012 (0.5 FTE or 689 hrs), and 2013 (1.03 FTE or 1,395 hours).

NRC Comment 89

On page 870 of 1080, 4.6.1, Table 2, Inspection Workload/Year analysis, does not appear to take into account initial start-up inspections or re-start inspections. The NRC review team has found that these type of inspections are generally more labor intensive than regular inspections and typically take approximately 40 hours per inspection at a site.

Table 2 also lists the Staff Hours at uranium recovery sites at 20 hours. The NRC review team has found generally that three full days (8 hour days) are needed for on- site inspections, which would equal 24 hours.

Please provide additional information to clarify Wyoming's estimates for the inspection workload.

WDEQ Response

Please see the tables provided in Subsection 4.6.1. The time spent on site was changed to 24 hours based on NRC review. Startup inspections are more than covered in the projected inspection workload. For example the next start up inspection is the AUC project, the URP projected two separate inspection to this facility annually. The dedicated resources to AUC will not be used completely until the startup has occurred. Therefore part of the resources budgeted for AUC cover the preoperational inspections. Additionally the URP plans on 2 enforcement/allegation/ preoperational inspections per year. These dedicated resources should cover any pre-operational inspection.

NRC Comment 90

On page 868 of 1080, Subsection 4.6.1, the NRC review team notes the uranium recovery program appears to have only one Health Physicist (HP) on staff, not counting the Program Manager.

The NRC has nine active licenses, seven of which are in Wyoming and provides approximately 8 FTE for Wyoming uranium recovery projects. The NRC uranium recovery program is currently reviewing one new application and four major expansions in Wyoming. Generally, approximately 75% of the NRC uranium recovery

program new licensing, major expansion, and licensing actions have been in Wyoming. The NRC uranium recovery program HP staff is at capacity with four full-time FTE, not including the HP staff in NRC Region IV that perform onsite inspections, with approximately 2 FTE of support for Wyoming uranium recovery projects.

The Texas uranium recovery program has 5 technical staff and one full time manager with 11 active radioactive material licenses. The Texas program provides 10 FTE to the uranium recovery program with 2.15 FTE of support going to the HP staff. The Utah uranium recovery program has 5.9 FTE with one active radioactive material license, one license in standby, and one license in decommissioning. The Utah program HP staff provides support of 1.9 FTE.

Please provide a clarification on the level of HP support the uranium recovery program estimates it will need to support the program.

WDEQ Response

The WDEQ recently reclassified an existing positions to a health physicist. The person in the position meet the qualifications based on their experience and educational background. With the reclassification, the program will dedicate 2.0 FTE (3408 hrs) to the program plus an additional 0.4 FTE from the Program Manager as shown in Table 1 of Subsection 4.6.1 of this application. The total dedicated HP resources would be 2.4 FTE which compares with Texas, Utah and the NRC.

Additionally the evaluation of the Texas program is unclear to the URP. It is unclear where the 10 FTE comes from. The URP has evaluated the latest IMPEP and questionnaire and it appears that the Texas staff has 5 technical positions and a program manager.

NRC Comment 91

On page 871 of 1080, Subsection 4.6.1, Wyoming estimates 5.6 FTE is needed for the uranium recovery program technical review and inspection workload. This workload referenced in the analysis was for licensing review/project management or inspections. The draft application states the uranium recovery program will employ five technical FTE to meet the estimated workload described.

The NRC review team notes the Uranium Recovery Program Manager is counted as one of the technical FTE. It does not appear the uranium recovery program should count the Program Manager as of the technical FTE needed to fulfil the staffing estimate provided. The Program Manager is shown in the application as primarily a supervisory and administrative position. On page 874 of 1080 on the Program Manager Job Content Questionnaire, the position description for the Program Manager shows the position as specifically general management (40%), understanding of law and regulation (25%), human resource management (15%) and program representation (20%). There is no time allotted in the Program Manager's position description to uranium recovery program technical review or inspection, although the Program Manager would be expected to review final work products or accompany inspectors as part of staff qualifications.

Please clarify the Wyoming workload estimates taking into account the above comments and the discussion provided in comment 90.

WDEQ Response

The job questionnaire for the Program Manager and the additional Health Physicist have been updated and are located in Subsection 4.6.1. The current projection after NRC input is 7.20 FTE of which 1.80 FTE is dedicated for inspections and 5.4 FTE is dedicated to license review and project management.

NRC Comment 92

On page 871 of 1080, Subsection 4.6.1, it states, "[T]he URP budget includes an additional 3.0 FTE, which are existing Wyoming personnel, to assist the URP workload. Most of the URP workload assigned to these 3.0 FTE will be similar to their existing job duties, which is duplicative of portions of current NRC efforts." The Criteria for Guidance of States and NRC in Discontinuance of NRC Regulatory Authority and Assumption thereof by States through Agreement, Criteria 33, indicates that when other state offices are utilized for contributing to the regulation of uranium processing and disposal of tailings, the lines of communication and administrative control between the state offices and the radiation control program should be clearly drawn.

It is unclear in the draft application if the existing Wyoming personnel will be qualified under the uranium recovery program. It is also unclear how the management of these personnel will be utilized for uranium recovery program reviews.

The Wyoming uranium recovery program currently has one geologist FTE identified. Other geologists and/or hydrogeologists FTEs have not been specifically identified in the application. The Texas program geologist and hydrogeologist staff currently provides support of 1.8 FTE. The Utah program geologist and hydrogeologist staff currently provides support of 1.6 FTE.

Please confirm that Land Quality Division personnel will be qualified under the uranium recovery program. Please describe how these individuals will be managed to perform uranium recovery program activities when needed. Specific Land Quality Division staff utilized for the budgeted staff should be identified and their qualifications included in the final application.
Please explain how Wyoming's proposed staffing level will provide adequate resources for the uranium recovery program.

WDEQ Response

To accommodate the workload Wyoming projected in its feasibility study the need of 8 FTE (13,632 hrs.). It was estimated that an additional 5 FTE (8,520 hrs) would be required to staff the newly created Uranium Recovery Program (URP). Additionally the URP would use 3 FTE (5,112 hrs) from the existing LQD workforce that were already regulating the permit to mine process for uranium. The 3 FTE (5,112 hrs.) are not

specific individuals but represent billable hours to the equivalent to 5,112 hours, providing the URP expertise in Geology, Hydrogeology, Ecology, Biology, Soil Sciences, and Engineering. The expertise within the URP will primarily be centralized around Health Physics and Geology/Hydrogeology.

In response to above comment the URP will dedicate 2 FTE for Geology/Hydrogeology and additionally it will use 3.0 FTE billable hours for an array of expertise from LQD. How the NRC wants this projected is unclear to the URP. The URP asks for guidance on showing individuals in the LQD. Would following Texas IMPEP be sufficient in which they list possible names and backgrounds.

Subsection 4.7 - Event and Allegation Response Program Elements

NRC Comment 93

On page 986 of 1080, Appendix A to Subsection 4.7, Wyoming has provided information on their proposed event and allegation response procedures. In Appendix A, some of the relevant sections regarding the handling of security related information, procedures for referring allegation to the State Attorney General or State Office of Inspector General equivalent for investigation, information on how the allegations will be tracked in the office and records maintained, and the State response to handling an alleger's fears of retaliation and granting or revoking confidential source status are absent.

Please review the Allegation Response Procedural Manual to ensure it captures the relevant provisions of Management Directive 8.8 to ensure that the State will have an adequate and compatible program for handling allegations. Criteria Policy Statement, Criteria 1 and 11, NMSS Agreement State Procedure Approval, SA-105, "Reviewing Common Performance Indicator, Technical Quality of Incident and Allegation Activities" and NMSS Agreement State Procedure Approval, SA-400, "Management of Allegations" can provide additional guidance.

Please revise your procedures for event and allegation response to include all elements in the three documents listed in the previous paragraph.

WDEQ Response

Sections 3.7, 3.8, 3.10, 3.11, 3.13, 3.15, and Definitions in the Glossary have been updated as requested.

Additional Comments from NRC

NRC Comment 94

On page 881 of 1080, Appendix A to Subsection 4.6.2, on the Job Content Questionnaire, for the position titled, Vacant Administrative Assistant II, the

Administrative Assistant II Position Description is missing page 2 of 5 and page 4 of 5.

Please provide the missing pages for the Questionnaire.

WDEQ Response

The URP provided the missing pages in Subsection 4.6.2 of this application. .

NRC Comment 95

On page 890 of 1080, Appendix A to Subsection 4.6.2, on the Job Content Questionnaire for the position titled, Vacant (New position authorized by Legislature), and the Position Description is missing page 2 of 6, 3 of 6, and page 5 of 6.

Please provide the missing pages for the Questionnaire.

WDEQ Response

The WDEQ updated the Job Questionnaire and it is provided in Subsection 4.6.2 of this application.

NRC Comment 96

On page 905 of 1080, Appendix B to Subsection 4.6.2, in Section 4.6.2.1, Qualification Plan Uranium Recovery Inspector,

(a) On Qualification Card 9, consider adding the specific uranium recovery events to review

(b) On Qualification Card 10, the training list may be out of date.

(c) On Qualification Guide 4,

Some of the guidance listed in this document are out-of-date. For example, NUREG-1569 is no longer in draft.

Please revise the document to list the current guidance documents.

WDEQ Response

This Qualification Guide was changed to reflect the current guidance.

NRC Comment 97

On page 905 of 1080, Appendix B to Subsection 4.6.2, in Section 4.6.2.2 on Qualification Guide 4, some of the guidance listed is out-of-date. For example, NUREG-1569 is no longer in draft. Several recent RISs are not referenced such as the following:

(i) Regulatory Issue Summary 2009-05, "Uranium Recovery Policy Regarding(1) The Process for Scheduling Licensing Reviews of Applications for New Uranium Recovery Facilities and (2) The Restoration of Groundwater at Licensed Uranium In Situ Recovery Facilities"
(ii) Regulatory Issue Summary 2009-12, "Uranium Recovery Policy Regarding Site Preparation Activities at Proposed, Unlicensed Uranium Recovery Facilities"
(iii) Regulatory Issue Summary 2009-14, "Licensing Approach for Uranium InSitu Recovery Facility Applications"
(iv) Regulatory Issue Summary 2011-11, "Regarding Long-Term Surveillance Charge for Conventional or Heap Leach Uranium Recovery Facilities Licensed Under 10 CFR Part 40"
(v) Regulatory Issue Summary 2012-06, "NRC Policy Regarding Submittal of Amendments for Processing of Equivalent Feed at Licensed Uranium Recovery Facilities"
(vi) Regulatory Issue Summary 2014-08, Rev. 1, "Regulatory Requirements for Transfer of Control (Change of Ownership) of Specific Materials Licenses"
(vii) Regulatory Issue Summary 2015-09, "Decommissioning Timeliness Rule Implementation and Associated Regulatory Relief"
(viii) Information Notice 1999-03, Rev. 1: "Exothermic Reaction Involving Dried Uranium Oxide Powder (Yellowcake)"

Please revise the document to list the current guidance documents.

WDEQ Response

These document references were added to the Qualification Guide.

<u>NRC Comment 98</u>

On page 927 of 1080, Appendix B to Subsection 4.6.2, under section Qualification Guide 4, Regulatory Guidance under subsection 3, NUREGs, there is a reference to NUREG/CR-5849 which has been superseded.

The following is an up-to-date list of NUREG and Regulatory guide references:

1. NUREG 1748, "Environmental Review Guidance for Licensing Actions Associated with NMSS Programs"
2. NUREG 1569, "Standard Review Plan for In Situ Leach Uranium Extraction License Page 58Applications"
3. NUREG/CR-6733, "A Baseline Risk-Informed, Performance-Based Approach for In Situ Leach Uranium Extraction Licensees"
4. NUREG-2126, "Standard Review Plan for Conventional Uranium Mill and Heap Leach Facilities, Draft Report for Comment"
5. NUREG-1910, "Generic Environmental Impact Statement for In-Situ Leach Uranium Milling Facilities"
6. NUREG-0706, "Final Generic Environmental Impact Statement on Uranium

Milling”

7. NUREG-2173, “Tribal Protocol Manual”
8. NUREG- 1556, Vol. 15, Consolidated Guidance About Materials Licenses, Guidance About Changes of Control and About Bankruptcy Involving Byproduct, Source, or Special Nuclear Materials Licenses”
9. Regulatory Guide 3.11, Rev. 3, “Design, Construction and Inspection of Embankment Retention Systems at Uranium Recovery Facilities”
10. Regulatory Guide 3.46, “Standard Format and Content of License Applications, Including Environmental Reports, for In Situ Uranium Solution Mining”
11. Regulatory Guide 3.63, “Onsite Meteorological Measurement Program for Uranium Recovery Facilities – Data Acquisition and Reporting”
12. Regulatory Guide 4.14, Rev. 1, “Radiological Effluent and Environmental Monitoring at Uranium Mills”
13. Regulatory Guide 4.15, “Quality Assurance for Radiological Monitoring Programs (Inception through Normal Operations to License Termination) – Effluent Streams and the Environment”
14. Regulatory Guide 4.22, “Decommissioning Planning During Operations”
15. Regulatory Guide 8.22, Rev. 2, “Bioassay at Uranium Mills”
16. Regulatory Guide 8.30, Rev. 1, “Health Physics Surveys in Uranium Recovery Facilities”
17. Regulatory Guide 8.30, Rev. 1, “Information Relevant to Ensuring that Occupational Radiation Exposures at Uranium Recovery Facilities will be as low as is Reasonably Achievable”

Please revise the document to list the current guidance documents.

WDEQ Response

These document references were added to the Qualification Guide.

<u>NRC Comment 99</u>

On page 991 of 1080, Appendix A to Subsection 4.7, Section 1.0, all of the references to FSME (Office of Federal, State, Material and Environmental Management Programs) need to be replaced with references to NMSS (Office of Nuclear Material Safety and Safeguards).

Please revise the document to reference NMSS (Office of Nuclear Material Safety and Safeguards).

WDEQ Response

References to FSME have been changed to NMSS. The definition of “NMSS” has been added to the Glossary in Appendix C of Subsection 4.7.

NRC Comment 100

Chapter 1, General Provisions, Sections 2-3, 10 CFR 20.1001 and 20.1002 The use of the terms “source material”, “milling”, and “byproduct material” will need to be coordinated with the terms as provided in Wyoming’s enabling legislation. For example, the NRC comments require revising the legislation to state Wyoming is obtaining authority over “source material involved in milling and the resulting byproduct material as specified in the act.”

For simplicity, the NRC review team has used the term “Uranium Recovery Program” throughout this letter to be consistent with the language in the draft application. However, the NRC review team continues to recommend deleting references to uranium "recovery" throughout the statutory provisions, regulations, and referring to this as the “Uranium Milling Program” instead of the “Uranium Recovery Program” to be consistent with the AEA, UMTRCA and the NRC regulatory provisions that only use the term “milling." The NRC review team also recommends that the regulations do not use the term in situ “mining” when referring to the activities would be covered under Wyoming’s Uranium “Milling” Program because the NRC has no authority over “mining” activities.

Additionally, the NRC review team recommends using the term “license” instead of “permit” to distinguish between material licenses issued under the radiation control program and permits issued under the Underground Injection Control, or other State programs, that issue permits.

This comment stands and is listed as comment 1 in NRC’s Oct. 3, 2016 letter.

WDEQ Response:

The use of the term “mining” is specific to Wyoming law governing the Land Quality Division and mining throughout the state. The URP will not revise any of the Land Quality Division Rules with respect to mining. Additionally, The URP mirrored the name of its program after the equivalent NRC program, also titled the “Uranium Recovery Program.” Again it may be helpful to think of the term mining associated with the permit to mine and the term milling associated with the source material license.

NRC Comment 101

Chapter 1, General Provisions, Section 5, Definitions 20.1003 Definitions: Byproduct Material Wyoming omits equivalent requirements for parts (1), (3) and (4) of the definition of byproduct material as defined in 10 CFR 20.1003. Wyoming will need to provide a definition that is consistent with the term “byproduct material” as defined in the enabling legislation.

In addition, Wyoming should include language regarding laboratory facilities. Specifically, the Wyoming definition of byproduct material should exclude the regulation of laboratory facilities by Wyoming to be consistent with Wyoming’s legislative provision in Article 20. Please also see comment number 28 that requests clarification if Wyoming intends for the NRC to retain sole authority over independent and commercial

laboratories handling source material involved in uranium milling.

Wyoming needs to submit requirements that meet these essential objectives in order to meet the Compatibility Category H&S designation assigned to 10 CFR 20.1003.

WDEQ Response:

The URP will not include definitions for other types of byproduct material. The URP believes that including these definitions would cause regulatory confusion. The URP will not be assuming regulation over these other types of byproduct material. Additionally, these other types of byproduct material are also not referenced in the Uranium Recovery rules, so there is no need for a definition in the rules. Furthermore, Wyo. Stat. § 35-11-2001(a) clearly establishes the regulatory scope of material that Wyoming will assume.

This comment stands and is listed as comment 2 in NRC's Oct. 3, 2016 letter.

NRC Comment 102

Chapter 1, General Provisions, Section 5, Definitions 20.1003 Definitions:

- Comment 4 - Commencement of Construction
- Comment 5 – Construction
- Comment 6 – Contamination
- Comment 7 – Exclusive use
- Comment 8 – Exposure rate
- Comment 9 – Financial assurance
- Comment 14 – Natural Uranium
- Comment 15 – Natural Thorium
- Comment 18 – Radiation Level
- Comment 19 – Radioactivity
- Comment 20 – Recovery
- Comment 21 – Residual Radioactive Material
- Comment 22 – Roentgen
- Comment 24 – Test
- Comment 26 – Uranium Milling

The comments associated to those listed above are being revised. The prior comment said that Wyoming has provided these definitions, but Wyoming will need to resubmit these definitions as a part of other regulations as applicable. However, Wyoming only provided these definitions in Chapter 1 and not in the other uranium recovery program Chapters. The NRC review team recommends adding introductory language in Chapter 1, Section 5 to clarify that the definitions in the section apply to all the Chapters relating to the uranium recovery program unless noted otherwise or Wyoming needs to include definitions in each appropriate regulatory chapter for the uranium recovery program.

WDEQ Response:

Chapter 1, Section 5 of the Uranium Recovery rules states: *" The following terms, as used in these rules and regulations shall, unless the context otherwise requires, have the following meaning."* As such, the definitions found in Chapter 1 apply to all of the Uranium Recovery rules. Therefore, the URP will not make the changes suggested by the NRC. NRC agreed that the language satisfies their concerns.

NRC Comment 103

Chapter 1, General Provisions, Section 5, Definitions 20.1003 Definitions:

- Comment 10 – License
- Comment 11 – Licensee
- Comment 12 – Licensed Material

Wyoming has provided unique reciprocity requirements in their enabling legislation. Wyoming needs to provide a definition of License, Licensee, and Licensed Material that also address its unique reciprocity in the regulations.

The definition of "Licensed Material" also needs to be revised to state "… extraction or concentration of uranium or thorium …." As mentioned in a prior comment, this description needs to be used consistently throughout the regulations.

WDEQ Response:

During the 2017 legislative session, Wyo. Stat. § 35-11-2003(a) was revised and eliminated the possibility for any "unique reciprocity requirements." The NRC agreed that the revised statute satisfy the concerns identified by the above-comment.

NRC Comment 104

Chapter 1, General Provisions, Section 5, Definitions 20.1003 Definitions:

- Comment 16 – Ore

This term is not defined in the NRC regulations. Please explain why this term needs to be defined. This comment stands and is listed as comment 16 in NRC's Oct. 3, 2016 letter.

WDEQ Response:

The URP removed the definition of "Ore" from Chapter 1 of the Uranium Recovery rules.

NRC Comment 105

Chapter 1, General Provisions, Section 5, Definitions 20.1003 Definitions:

- Comment 27 – Waste
- Comment 28 – Licensed Site
- Comment 29 – Ore

The above comments from NRC's Oct 3, 2016 letter are being revised. Definition of waste fails to explicitly exclude byproduct (1), (3), and (4) material from the definition of waste. The definition of "waste" should be revised to exclude byproduct material (1), (3), and (4). The definition also excludes 11e.(2) byproduct material.

Please explain how this definition of "waste" interacts with the definition of 11e.(2) byproduct material requiring the regulation of tailings and "waste" associated with the concentration or extraction of uranium or thorium. The definition of "waste" in 10 CFR 20.1003 is Compatibility Category B which requires the State Program element to be essentially identical to that of the NRC.

The definitions of "Licensed Site" and "Ore" are not defined in the NRC regulatory provisions. Please explain why these terms need to be defined and what effect the terms will have on Wyoming's program.

The above comment numbers correspond to the comments listed in NRC's Oct. 3, 2016 letter.

WDEQ Response:

The term "Licensed Site" is defined in 10 C.F.R. Part 40, Appendix A. This term must be incorporated verbatim as it is a Compatibility A requirement. The definition for "Waste" matches the NRC's definition for "Waste," and it is a Compatibility B requirement. As such, the URP will not make any of the changes suggested by the NRC with respect to these terms. However, the URP removed the definition of "Ore" from Chapter 1 of the Uranium Recovery rules.

<u>NRC Comment 106</u>

Chapter 1, General Provisions, Section 5, Definitions 20.1003 Definitions:

- Comment 29 – Operations

Wyoming has provided this definition as a part of their regulations equivalent 10 CFR Part 20. Wyoming will need to resubmit this definition as a part of other regulations as applicable. The comment stands and corresponds to comment 29 listed in NRC's Oct. 3, 2016 letter.

WDEQ Response:

The NRC defines "Operation" in 10 C.F.R. Part 40 Appendix A. This definition of "Operation" has been incorporated verbatim as it is a Compatibility A requirement. As such, the URP will not make any of the changes suggested by the NRC with respect to this term.

<u>NRC Comment 107</u>

The following comments were previously provided in the NRC's Oct. 13, 2016 letter to Wyoming. The comments do not refer to any information provided in the draft application. The comments that have been adequately addressed are

excluded from this document.

Chapter 4, Licensing Requirements, Section 1

- Comments 1, 2 and 3 still stand.
- Comments 7 and 9 still stand.

Comment 1 from NRC's Oct. 13, 2016 letter:

Wyoming Chapter 4, Section 1(a), it states, "[T]his Chapter establishes the criteria for issuance and terms of conditions upon which the Department may issue licenses to receive title to, acquire, own, possess, transfer, offer or receive for transport, or deliver any source material from recovery or milling and the created byproduct material."

Wyoming needs to replace the phrase "source material from recovery or milling and the created byproduct material" with the phrase "source material involved in uranium or thorium recovery or milling, and byproduct material as defined in Section 11e.(2) of the Atomic Energy Act of 1954, 42 U.S.C. § 2014(e)(2), as amended." Wyoming needs to make the above change in order to be consistent with language that will be in their Agreement and enabling legislation.

WDEQ Response:

Please see response to NRC comments: [32, 33].

Comment 2 from NRC's Oct. 13, 2016 letter:

Wyoming Chapter 4, Section 2(a), it states, "[T]his Chapter establishes performance objectives and procedural requirements applicable to any source material recovery or milling operation and to waste systems for byproduct material including specific technical and financial requirements for siting, construction, operating, monitoring, decontamination, reclamation, and ultimate stabilization, as well as requirements for licensee transfer and termination, long-term site monitoring, surveillance, ownership, and ultimate custody of source material milling facilities and byproduct material impoundments."

Wyoming needs to replace the phrase "source material recovery or milling operation" with the phrase "operation related to source material involved in uranium or thorium recovery or milling, and byproduct material as defined in Section 11e.(2) of the Atomic Energy Act of 1954, 42 U.S.C. § 2014(e)(2), as amended." Wyoming needs to make the above change in order to be consistent with language that will be in their Agreement and enabling legislation.

WDEQ Response:

Please see response to NRC comments: [32, 33].

Comment 3 from NRC's Oct. 13, 2016 letter:

Wyoming Chapter 4 does not address licensing of mill operations at sites no longer active if the site is covered by the remedial action program of UMTRCA Title I. Wyoming needs to include language in their equivalent to 10 CFR 40.2a that addresses the licensing of mill operations at sites no longer active if the site is covered by the remedial action program of UMTRCA Title I. Wyoming needs to make the above change in order to meet the Compatibility Category A designation assigned to 10 CFR 40.2a.

WDEQ Response:

Please see response to NRC comment 41.

Comment 7 from NRC's Oct. 13, 2016 letter:

Wyoming omits equivalent recordkeeping requirements for decommissioning as defined in 10 CFR 40.36 (f). Wyoming needs to submit requirements that meet the essential health and safety objectives in order to meet the Compatibility Category H&S designation assigned to 40.36(f).

WDEQ Response:

Please see response to NRC comment 34.

Comment 9 from NRC's Oct. 13, 2016 letter:

Wyoming has excluded this regulation and considers this regulation outside the scope of its agreement. Wyoming has provided unique reciprocity requirements in their enabling legislation. Wyoming needs to submit requirements that meet the essential objectives in order to meet the Compatibility Category C designation assigned to 10 CFR 150.20.

Wyoming also needs to address its unique reciprocity regulations contained in its enabling legislation.

WDEQ Response:

The URP will incorporate10 C.F.R. § 150.20 by reference in Chapter 4, Section 3(c) of the Uranium Recovery rules. Please see response to NRC comment 103.

Section 4.1 Legal Elements

Department of Environmental Quality

WYOMING

Subsection 4.1.1

Authority to Establish a Program and Enter Into an Agreement

Department of Environmental Quality

WYOMING

4.1.1 Authority to Establish a Program and Enter Into an Agreement

Section 4.1.1 of SA-700, *Handbook for Processing an Agreement* requires that Wyoming law "provide specific elements of authority to the Agreement materials program." The Wyoming Department of Environmental Quality ("WDEQ") seeks to assume regulatory authority over source material involved in the extraction or concentration of uranium or thorium in source material and ores at milling facilities, and the management and disposal of byproduct material as defined in Section 11e.(2) of the Atomic Energy Agency (AEA). WDEQ's statutory authority to establish and implement the Uranium Recovery Program is provided in the Wyoming Environmental Quality Act, Wyoming Statutes §§ 35-11-101 *et seq.*, and the Administrative Procedure Act, Wyoming Statutes §§ 16-3-101 *et seq*. Both the Wyoming Environmental Quality Act and the Administrative Procedure Act are provided in the accompanying appendices.

Section 4.1.1 contains a number of legal requirements identified in Subsections 4.1.1.1 through 4.1.1.4. These requirements are outlined below with citation to the legal authority satisfying those requirements.

SA 700, *Handbook for Processing an Agreement*

4.1 Legal Elements

4.1.1 Authority to Establish a Program and Enter Into Agreement

- *See* Wyo. Stat. §§ 35-11-101 *et seq.*
- *See* Wyo. Stat. §§ 16-3-101 *eq seq.*
- Wyo. Stat. §§ 35-11-2001 through -2005

4.1.1.1 Information needed

(a) Establishes the Agreement material program, defines its structure, and authorizes the Governor to enter into an Agreement with the Commission.

- Wyo. Stat. §§ 35-11-2001(a) through (c)

(b) Authorizes the program to issue licenses, including the following:

1. Authorizes the program to impose additional license requirements.

- Wyo. Stat. §§ 35-11-2003(a) through (b) and 35-11-2004(a)

2. Authorizes the program to give exemptions from licensing requirements.

- Wyo. Stat. § 35-11-2003(c)

3. Authorizes the program to recognize the licenses of other jurisdictions (that is, reciprocity).

- Wyo. Stat. § 35-11-2003(a) authorizes WDEQ to recognize licenses issued by the NRC.
- Wyo. Stat. § 35-11-2003(a) authorizes WDEQ to recognize licenses issued by the other Agreement States as it pertains to source material involved in uranium

or thorium recovery or milling and the associated byproduct material.

4. Makes it unlawful to acquire, possess, store, use, transfer, or dispose of materials without a valid license, or to violate the conditions of a license; and

- Wyo. Stat. § 35-11-2002(a)

5. Authorizes the program to recognize licenses transferred from the NRC under the Agreement as State licenses.

- Wyo. Stat. § 35-11-2003(a) authorizes WDEQ to recognize licenses issued by the NRC.

(c) Authorizes the program to adopt regulations.

- Wyo. Stat. §§ 35-11-2001(b) and 35-11-2002(b)

1. Specifies the procedures and requirements for adoption of regulations, including public participation; and

- Wyo. Stat. § 35-11-2002(b)
- Wyo. Stat. §§ 16-3-101 through -106
- Wyo. Stat. § 35-11-112(a)(ii)
- WDEQ *Rules of Practice and Procedure*, Chapter 3 (Revised Chapter 3 currently in rulemaking process)

2. Allows the program to impose requirements in the form of other generic legally binding requirements, such as license conditions or orders.

- Wyo. Stat. §§ 35-11-2003(b) and 35-11-2004(a)

(d) Authorizes representatives of the program to enter premises and conduct inspections.

- Wyo. Stat. § 35-11-2003(d)

(e) Authorizes the program to require compliance with regulatory requirements by both licensees and unlicensed individuals.

- Wyo. Stat. 35-11-2002(a)

(f) Authorizes the program to impose sanctions for violations of the regulations, orders, or license conditions.

- Wyo. Stat. § 35-11-2003(f)

(g) Establishes conflict of interest and ethics regulations or procedures applicable to those portions of the State radiation control program covered by the Agreement.

- Wyo. Stat. §§ 9-13-101 through -109.

(h) If the program will include the regulation of byproduct material as defined in Section 11e. (2) of the AEA, the State should submit the State law that authorizes the regulation of uranium and thorium milling facilities including disposal of mill tailings.

- Wyo. Stat. §§ 35-11-2001 through -2004

4.1.1.2 Evaluation Criteria

(a) State law must authorize the Governor to enter into an Agreement. It must also designate a radiation control agency and provide it the necessary legal authority to be effective.

- Wyo. Stat. §§ 35-11-2001(a) through (c)

(b) State law must not create duplications, gaps or conflicts in regulation. This includes duplications, gaps, or conflicts between the State and the NRC, State agencies, or State and local agencies. The law must not seek to regulate activities reserved to the NRC.

- Wyo. Stat. § 35-11-2003(c)
- *See* § Wyo. Stat. 35-11-2002(b)
- *See Generally* Uranium Recovery Program Rules,

(c) State law must authorize issuing licenses as the means of giving the authority to possess and use Agreement materials. It should also authorize the reciprocal recognition of specific licenses issued by the NRC or other Agreement States.

- Wyo. Stat. § 35-11-2003(a)

(d) State law should authorize the use of license conditions to address matters unique to the licensee. The law should allow license conditions to impose additional requirements when required to protect public health and safety. If the law restricts the use of license conditions, the State should show that they can provide adequate protection under restrictions. The protection should be at least equivalent to using license conditions and orders.

- Wyo. Stat. § 35-11-2003(b) and -2004(a)

(e) The law should permit exemptions from licensing requirements if the exemptions do not adversely affect public health and safety. This should include exemption(s) from the requirement to obtain a license. The law should authorize exemptions from licensing substantially equivalent to the following (or such exemptions must be included in the State's regulations):

- Wyo. Stat. § 35-11-2003(c)
- *See* Wyo. Stat. § 35-11-2002(b)

1. Prime contractors working for the U.S. Department of Energy (DOE) at U.S. Government-owned or controlled sites.

- *See* Wyo. Stat. § 35-11-2002(b)
- Uranium Recovery Program Rules, Chapter 1, Section 11(b)(i)

2. Prime contractors researching, developing, manufacturing, storing, testing, or transporting atomic weapons or components.

- *See* Wyo. Stat. § 35-11-2002(b)
- Uranium Recovery Program Rules, Chapter 1, Section 11(b)(ii)

3. Prime contractors using or operating nuclear reactors or other nuclear devices in a U.S. Government-owned vehicle or vessel;

- *See* Wyo. Stat. § 35-11-2002(b)
- Uranium Recovery Program Rules, Chapter 1, Section 11(b)(ii)

4. Any other prime contractor (or subcontractors) of DOE or NRC when the State and NRC jointly determine (i) that the terms of the contract provide adequate assurance that the contractor can accomplish the work without undue risk to public health and safety and (ii) that the law authorizes the exemption.

- *See* Wyo. Stat. § 35-11-2002(b)
- Uranium Recovery Program Rules, Chapter 1, Section 11(b)(iv)

(f) The law must authorize the Agreement material program to enforce regulations or generic legally binding requirements other than regulations. The law may authorize another agency (such as board of health) to adopt regulations. When appropriate the law should provide public participation.

- Wyo. Stat. §§ 35-11-2002(a) and (b)
- Wyo. Stat. §§ 16-3-101 through -106

(g) The law must authorize inspections of licensee operations to ensure compliance with regulatory requirements. It should authorize inspections of unlicensed facilities to assess the risk resulting from accidents or environmental releases of material. The law should permit access at all reasonable times.

- Wyo. Stat. § 35-11-2003(d)

(h) The law must provide authority to take prompt enforcement action, and should provide a variety of legal sanctions. The law should provide authority to suspend licenses and to impound materials. In cases of imminent threat to public health and safety, the law should authorize immediate suspension without prior hearing.

- Wyo. Stat. §§ 35-11-115 and -2003(f)

(i) The law should authorize suspension or revocation of a license for repeated or continued noncompliance. The authority to suspend or revoke a license may be conditioned on a prior administrative or judicial hearing. The program should also have authority to seek injunctive relief and refer licensees for criminal prosecution. The program should also consider authority to impose civil or

administrative monetary penalties.

- Wyo. Stat. §§ 35-11-115 and -2003(f)
- Uranium Recovery Program Rules, Chapter 2, Section 4(b) & 4(d)

(j) The State must resolve any questions the NRC has regarding interpretation of State law. Interpretations of State law must be provided by the State Attorney General, or other attorney designated as legal advisor to the Agreement material program.

- Wyo. Stat. § 9-1-603
- *See* Wyo. Stat. § 35-11-606 (defining "State Official" as used in Wyo. Stat. § 35- 11-603)

4.1.1.4 Additional Evaluation Criteria for 11e. (2) Byproduct Material Agreements

The law should clearly authorize the Agreement materials program to carry out the requirements of the Uranium Mill Tailing Radiation Control Act of 1978, as amended (UMTRCA). Specifically the law should:

(a) Authorize the Agreement material program to regulate 11e.(2) byproduct material;

- Wyo. Stat. § 35-11-2001(b)

(b) Authorize the Agreement materials program to require licensees to provide a financial surety arrangement. The arrangement should be such that sufficient funds will be available to cover the costs of both decommissioning and long-term surveillance and maintenance;

- Wyo. Stat. §§ 35-11-2001 and -2003(e)

(c) Require the program, before issuing an 11e.(2) byproduct material license, to do the following:

1. Give notice of the proposed licensing action and accept written comments during a public comment period;

- *See* Wyo. Stat. § 35-11-2002(b)
- Uranium Recovery Program Rules, Chapter 4, Section 15

2. Prepare a written analysis of the impact of the environment of the licensed activity;

- Uranium Recovery Program Rules, Chapter 4 Section 15(a)

3. Hold a public hearing with a transcript and cross examination;

- *See* Wyo. Stat. § 35-11-2002(b)
- Uranium Recovery Program Rules, Chapter 4, Section 15

4. Prepare a written decision based on evidence presented during the public comment period. The decision must be subject to judicial review, and

- *See* Wyo. Stat. § 35-11-2002(b)
- Uranium Recovery Program Rules, Chapter 4, Section 15
- Wyo. Stat. § 16-3-114

5. Ban major construction before the completion of the written environmental analysis.

- Wyo. Stat. § 35-11-2003(d)
- *See* Wyo. Stat. § 35-11-2002(b)
- Uranium Recovery Program Rules, Chapter 4, Sections 15(d)

(d) Require the Agreement materials program to provide an opportunity for public participation through written comment or public hearings during rulemaking. The law must also make rules subject to judicial review; and

- Wyo. Stat. §§ 16-3-102 and -114
- Wyo. Stat. § 35-11-112(a)(ii)

(e) Require the Agreement material program, before terminating an 11e.(2) byproduct material license to do the following:

1. Transfer funds collected for decommissioning and long-term surveillance and maintenance to the United States. The law must require this transfer when custody of the disposal site transfers to the United States. Funds transferred must include all funds collected from a licensee or its surety. The only exception are funds collected for decommissioning if it is completed.

- Wyo. Stat. § 35-11-2004(d)

2. Choose whether or not to take title to the disposal site and byproduct material; and

- Wyo. Stat. § 35-11-2004(c)

3. Obtain a determination from the Commission that all applicable standards are satisfied.

- Wyo. Stat. § 35-11-2004(b)

(f) The state law must consider the authorities reserved to the NRC under UMTRCA including authority to:

1. Establish a minimum standards governing reclamation, long-term surveillance or maintenance, and ownership of the 11e.(2) byproduct material;

- Wyo. Stat. § 35-11-2001(a)
- *See* Wyo. Stat. § 35-11-2002(b)

- Uranium Recovery Program Rules, Chapter 4, Section 3(d)

2. Determine, before the termination of a license, that the licensee has complied with decontamination, decommissioning, and reclamation standards, and ownership requirements for sites at which 11e.(2) byproduct material is present;

- Wyo. Stat. §§ 35-11-2001(a) and -2004(b)
- *See* Wyo. Stat. § 35-11-2002(b)
- Uranium Recovery Program Rules, Chapter 4, Section 3(d)

3. Require before termination of a license for 11e.(2) byproduct material or for any activity that results in the production of such material, that the title to the 11e. (2) byproduct material and the disposal site are transferred to the Federal Government (or State at the option of the State, provided the State exercises the option before termination of the license);

- Wyo. Stat. § 35-11-2001(a) and -2004(d)
- *See* Wyo. Stat. § 35-11-2002(b)
- Uranium Recovery Program Rules, Chapter 4, Section 3(d)

4. Require monitoring, maintenance, and emergency measures after the license is terminated as may be necessary to protect the public health and safety for those materials and property for which the State has assumed custody;

- Wyo. Stat. § 35-11-2001(a)
- *See* Wyo. Stat. § 35-11-2002(b)
- Uranium Recovery Program Rules, Chapter 4, Section 3(d)

5. Permit use of the surface or subsurface estate, or both, of the disposal site land transferred to the United States or the State; and

- Wyo. Stat. § 35-11-2001(a)
- *See* Wyo. Stat. § 35-11-2002(b)
- Uranium Recovery Program Rules, Chapter 4, Section 3(d)

6. Exempt land ownership transfer requirements of Section 83(b)(1)(A) of the AEA.
- Wyo. Stat. § 35-11-2001(a)

Appendix A to Subsection 4.1.1 Wyoming Environmental Quality Act

Department of Environmental Quality

WYOMING

CHAPTER 11
ENVIRONMENTAL QUALITY

ARTICLE 1
GENERAL PROVISIONS

35-11-101. Short title.

This act shall be known and may be cited as the "Wyoming Environmental Quality Act".

35-11-102. Policy and purpose.

Whereas pollution of the air, water and land of this state will imperil public health and welfare, create public or private nuisances, be harmful to wildlife, fish and aquatic life, and impair domestic, agricultural, industrial, recreational and other beneficial uses; it is hereby declared to be the policy and purpose of this act to enable the state to prevent, reduce and eliminate pollution; to preserve, and enhance the air, water and reclaim the land of Wyoming; to plan the development, use, reclamation, preservation and enhancement of the air, land and water resources of the state; to preserve and exercise the primary responsibilities and rights of the state of Wyoming; to retain for the state the control over its air, land and water and to secure cooperation between agencies of the state, agencies of other states, interstate agencies, and the federal government in carrying out these objectives.

35-11-103. Definitions.

(a) For the purpose of this act, unless the context otherwise requires:

(i) "Department" means the department of environmental quality established by this act;

(ii) "Council" means the environmental quality council established by this act;

(iii) "Director" means the director of the department of environmental quality;

(iv) "Board" means one (1) or more of the advisory boards in each division of air, land, or water quality;

(v) "Administrator" means the administrator of each division of the department;

(vi) "Person" means an individual, partnership, firm, association, joint venture, public or private corporation, trust, estate, commission, board, public or private institution, utility, cooperative, municipality or any other political subdivision of the state, or any interstate body or any other legal entity;

(vii) "Aggrieved party" means any person named or admitted as a party or properly seeking or entitled as of right to be admitted as a party to any proceeding under this act because of damages that person may sustain or be claiming because of his unique position in any proceeding held under this act;

(viii) "Interstate agency" means an agency of two (2) or more states established by or pursuant to an agreement or compact approved by the United States Congress or any other agency of two (2) or more states, having substantial powers or duties pertaining to the control of air, land or water pollution;

(ix) "Municipality" means a city, town, county, district, association or other public body;

(x) "Nonpoint source" means any source of pollution other than a point source. For purposes of W.S. 16-1-201 through 16-1-207 only, nonpoint source includes leaking underground storage tanks as defined by W.S. 35-11-1415(a)(ix) and aboveground storage tanks as defined by W.S. 35-11-1415(a)(xi);

(xi) "Point source" means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation or vessel or other floating craft, from which pollutants are or may be discharged;

(xii) The singular includes the plural, the plural the singular, and the masculine and feminine or neuter, when consistent with the intent of this act and necessary to effect its purpose;

(xiii) "This act" means W.S. 35-11-101 through 35-11-403, 35-11-405, 35-11-406, 35-11-408 through 35-11-1106, 35-11-1414 through 35-11-1432, 35-11-1601 through 35-11-1613, 35-11-1701, 35-11-1801 through 35-11-1803 and 35-11-2001 through 35-11-2004.

(b) Specific definitions applying to air quality:

(i) "Air contaminant" means odorous material, dust, fumes, mist, smoke, other particulate matter, vapor, gas or any combination of the foregoing, but shall not include steam or water vapor;

(ii) "Air pollution" means the presence in the outdoor atmosphere of one (1) or more air contaminants in such quantities and duration which may be injurious to human health or welfare, animal or plant life, or property, or unreasonably interferes with the enjoyment of life or property;

(iii) "Clean Air Act" means the federal Clean Air Act of 1977, as amended by P.L. 101-549;

(iv) "Emission" means a release into the outdoor atmosphere of air contaminants;

(v) "Operating permit program" means the permitting program authorized by W.S. 35-11-203 through 35-11-212 implementing a state plan pursuant to the 1990 amendments to the Clean Air Act;

(vi) "Stationary source" means any building, structure, facility or installation which emits or may emit any air contaminant.

(c) Specific definitions applying to water quality:

(i) "Pollution" means contamination or other alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity or odor of the waters or any discharge of any acid or toxic material, chemical or chemical compound, whether it be liquid, gaseous, solid, radioactive or other substance, including wastes, into any waters of the state which creates a nuisance or renders any waters harmful, detrimental or injurious to public health, safety or welfare, to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses, or to livestock, wildlife or aquatic life, or

which degrades the water for its intended use, or adversely affects the environment. This term does not mean water, gas or other material which is injected into a well to facilitate production of oil, or gas or water, derived in association with oil or gas production and disposed of in a well, if the well used either to facilitate production or for disposal purposes is approved by authority of the state, and if the state determines that such injection or disposal well will not result in the degradation of ground or surface or water resources;

(ii) "Wastes" means sewage, industrial waste and all other liquid, gaseous, solid, radioactive, or other substances which may pollute any waters of the state;

(iii) "Sewerage system" means pipelines, conduits, storm sewers, pumping stations, force mains, and all other constructions, devices, appurtenances and facilities used for collecting or conducting wastes to an ultimate point for treatment or disposal;

(iv) "Treatment works" means any plant or other works used for the purpose of treating, stabilizing or holding wastes;

(v) "Disposal system" means a system for disposing of wastes, either by surface or underground methods, including sewerage systems, treatment works, disposal wells, and absorption fields;

(vi) "Waters of the state" means all surface and groundwater, including waters associated with wetlands, within Wyoming;

(vii) "Discharge" means any addition of any pollution or wastes to any waters of the state;

(viii) "Public water supply" means a system for the provision to the public of water for human consumption through pipes or constructed conveyances, if such system has at least fifteen (15) service connections or regularly serves at least twenty-five (25) individuals. Public water supply shall include:

(A) Any collection, treatment, storage and distribution facility under control of the operator of the facility and used primarily in connection with the system; and

(B) Any collection or pretreatment storage facilities not under the control of the operator which are used primarily in connection with the system.

(ix) "Small wastewater system" means any sewerage system, disposal system or treatment works having simple hydrologic and engineering needs which is intended for wastes originating from a single residential unit serving no more than four (4) families or which distributes two thousand (2,000) gallons or less of domestic sewage per day;

(x) "Wetlands" means those areas in Wyoming having all three (3) essential characteristics:

(A) Hydrophytic vegetation;

(B) Hydric soils; and

(C) Wetland hydrology.

(xi) "Compensatory mitigation" means replacement, substitution or enhancement of ecological functions and wetland values to offset anticipated losses of those values caused by filling, draining or otherwise damaging a wetland;

(xii) "Ecological function" means the ability of an area to support vegetation and fish and wildlife populations, recharge aquifers, stabilize base flows, attenuate flooding, trap sediment and remove or transform nutrients and other pollutants;

(xiii) "Mitigation" means all actions to avoid, minimize, restore and compensate for ecological functions or wetland values lost;

(xiv) "Natural wetlands" means those wetlands that occur independently of human manipulation of the landscape;

(xv) "Man-made wetlands" means those wetlands that are created intentionally or occur incidental to human activities, and includes any enhancement made to an existing wetland which increases its function or value;

(xvi) "Wetland value" means those socially significant attributes of wetlands such as uniqueness, heritage, recreation, aesthetics and a variety of economic values;

(xvii) "Community water system" means a public water supply that has at least fifteen (15) service connections used year-round by residents or that regularly provides water to at least twenty-five (25) residents year-round, including, but not limited to, municipalities and water districts;

(xviii) "Nontransient noncommunity water system" means a public water supply which is not a community water system and which regularly provides service to at least twenty-five (25) of the same persons for more than six (6) months of the year where those persons are not full-time residents, including, but not limited to, schools, factories and office buildings;

(xix) "Credible data" means scientifically valid chemical, physical and biological monitoring data collected under an accepted sampling and analysis plan, including quality control, quality assurance procedures and available historical data;

(xx) "Geologic sequestration" means the injection of carbon dioxide and associated constituents into subsurface geologic formations intended to prevent its release into the atmosphere;

(xxi) "Geologic sequestration site" means the underground geologic formations where the carbon dioxide is intended to be stored;

(xxii) "Geologic sequestration facilities" means the surface equipment used for transport, storage and injection of carbon dioxide.

(d) Specific definitions applying to solid waste management:

(i) "Solid waste" means garbage, and other discarded solid materials, materials, including solid waste materials resulting from industrial, commercial, and agricultural operations, and from community activities, but, unless disposed of at a solid waste management facility, does not include:

(A) Solids or dissolved material in domestic sewerage or other significant pollutants in water resources, such as silt, dissolved or suspended solids in industrial waste water effluents, dissolved materials in irrigation return flows or other common water pollutants;

(B) Liquids, solids, sludges or dissolved constituents which are collected or separated in process units for recycling, recovery or reuse including the recovery of energy, within a continuous or batch manufacturing or refining process; or

(C) Agricultural materials which are recycled in the production of agricultural commodities.

(ii) "Solid waste management facility" means any facility for the transfer, treatment, processing, storage or disposal of solid waste, but does not include:

(A) Lands or facilities subject to the permitting requirements of article 3 of this act;

(B) Facilities which would have been subject to the permitting requirements of article 3 of this act if constructed after July 1, 1973;

(C) Any facility described under W.S. 30-5-104(d)(vi)(A) or (B);

(D) Lands and facilities subject to the permitting requirements of article 2, 3 or 4 of this act used solely for the management of wastes generated within the boundary of the permitted facility or mine operation by the facility or mine owner or operator or from a mine mouth electric power plant or coal drier;

(E) Lands and facilities owned by a person engaged in farming or ranching and used to dispose of solid waste generated incidental to his farming and ranching operations; or

(F) Transport vehicles, storage containers and treatment of the waste in containers.

(iii) "Cost effective" means the selection of alternative responses taking into account total short-term and long-term costs of those responses including the costs of operation and maintenance for the entire activity, the presence of naturally occurring hazardous or toxic substances, current or potential uses of the natural resources impacted;

(iv) "Commercial solid waste management facility" means any facility receiving a monthly average greater than five hundred (500) short tons per day of unprocessed household refuse or mixed household and industrial refuse for management or disposal;

(v) "Commercial radioactive waste management facility" means any facility used or intended to be used to receive for disposal, storage, reprocessing or treatment, any amount of radioactive wastes which are generated by any person other than the facility owner or operator, or which are generated at a location other than the location of the facility, but does not include:

(A) Uranium mill tailings facilities licensed by the United States Nuclear Regulatory Commission which receive in situ leaching uranium mining byproduct materials or are specifically authorized by the department on a limited basis to receive small quantities of wastes defined in section 11e.(2) of the Atomic Energy Act of 1954, 42 U.S.C. § 2014(e)(2), as amended, which were generated by persons other than the facility owner or operator or which were generated at a location other than the location of the facility, or both; and

(B) Facilities used for the temporary storage of radioactive wastes generated by the facility owner or operator, including facilities for the temporary storage of naturally occurring radioactive materials generated during the course of oil or natural gas exploration or production, provided the storage of radioactive wastes is in compliance with applicable state and federal law; and

(C) Permitted solid waste disposal facilities which are authorized by the director to receive small quantities of radioactive wastes containing only naturally occurring radioactive materials, or which receive radioactive materials that have been exempted from regulation under section 10 of the Low-Level Radioactive Waste Policy Amendments Act of 1985, 42 U.S.C. § 2021j, or both if found by the department not to threaten human health and the environment; and

(D) Federally owned facilities used exclusively for the storage, reprocessing or treatment of spent reactor fuel;

(E) Facilities licensed by the United States nuclear regulatory commission whose sole purpose is to receive

in situ leaching uranium mining byproduct materials as defined in section 11e.(2) of the Atomic Energy Act of 1954, 42 U.S.C. § 2014(e)(2), as amended.

(vi) "Long term remediation and monitoring trust" means a trust account established to provide funding for perpetual monitoring, maintenance and remediation of any commercial radioactive waste management facility. The adequacy of the initial and subsequent funding, including the quality of any bond or letter of credit, shall be determined jointly by the director, the insurance commissioner and the attorney general. Expenditures from the trust shall be only for commercial radioactive waste regulation, monitoring and remediation;

(vii) "Hazardous waste" means any liquid, solid, semisolid or contained gaseous waste or combination of those wastes which because of quantity, concentration or physical, chemical or infectious characteristics may cause or significantly contribute to detrimental human health effects, or pose a substantial present or potential hazard to human health or the environment. Only those materials listed as hazardous wastes by the United States environmental protection agency's hazardous waste management regulations or which exhibit a hazardous waste characteristic specified by the environmental protection agency shall be considered hazardous wastes. Hazardous waste does not include those hazardous wastes exempted under the Resource Conservation and Recovery Act, P.L. 94-580, or under the United States environmental protection agency's hazardous waste management regulations for the period that they remain exempted by congressional or administrative action;

(viii) "Composite liner" means a system consisting of two (2) components; the upper component must consist of a minimum thirty (30) mil flexible membrane liner (FML) and the lower component shall consist of at least a two (2) foot layer of compacted soil with a hydraulic conductivity of no more than 1 x 10-7 centimeters per second. A flexible membrane liner components consisting of high density polyethylene (HDPE) shall be at least sixty (60) mil thick. The flexible membrane liner component shall be installed in direct and uniform contact with the compacted soil component;

(ix) "Leachate" means liquid that has passed through or emerged from solid waste and contains soluble, suspended or miscible materials removed from such wastes;

(x) "Statistical power" means the probability of detecting change given that a change has truly occurred;

(xi) "Eligible leaking municipal solid waste landfill" means the landfills identified by the department under the priority list for municipal solid waste landfills that need remediation created pursuant to W.S. 35-11-524(b).

(e) Specific definitions for land quality:

(i) "Reclamation" means the process of reclaiming an area of land affected by mining to use for grazing, agricultural, recreational, wildlife purposes, or any other purpose of equal or greater value. The process may require contouring, terracing, grading, resoiling, revegetation, compaction and stabilization, settling ponds, water impoundments, diversion ditches, and other water treatment facilities in order to eliminate water diminution to the extent that existing water sources are adversely affected, pollution, soil and wind erosion, or flooding resulting from mining or any other activity to accomplish the reclamation of the land affected to a useful purpose;

(ii) "Minerals" means coal, clay, stone, sand, gravel, bentonite, scoria, rock, pumice, limestone, ballast rock, uranium, gypsum, feldspar, copper ore, iron ore, oil shale, trona, and any other material removed from the earth for reuse or further processing;

(iii) "Contouring" means grading or backfilling and grading the land affected and reclaiming it to the proposed future use with adequate provisions for drainage. Depressions to accumulate water are not allowed except if approved as part of the reclamation plan;

(iv) "Overburden" means all of the earth and other materials which lie above the mineral deposit and also means such earth and other materials disturbed from their natural state in the process of mining, or mining from exposed natural deposits;

(v) "Underground mining" means the mining of minerals by man-made excavation underneath the surface of the earth;

(vi) "Pit" means a tract of land from which overburden has been or is being removed for the purpose of surface mining or mining from an exposed natural deposit;

(vii) "Adjacent lands" means all lands within one-half mile of the proposed permit area;

(viii) "Operation" means all of the activities, equipment, premises, facilities, structures, roads, rights-of-way, waste and refuse areas excluding uranium mill tailings and mill facilities, within the Nuclear Regulatory Commission license area, storage and processing areas, and shipping areas used in the process of excavating or removing overburden and minerals from the affected land or for removing overburden for the purpose of determining the location, quality or quantity of a natural mineral deposit or for the reclamation of affected lands;

(ix) "Operator" means any person, as defined in this act, engaged in mining, either as a principal who is or becomes the owner of minerals as a result of mining, or who acts as an agent or independent contractor on behalf of such principal in the conduct of mining operations;

(x) "Surface mining" means the mining of minerals by removing the overburden lying above natural deposits thereof and mining directly from the natural deposits thereby exposed, including strip, open pit, dredging, quarrying, surface leaching, and related activities;

(xi) "Mining permit" means certification by the director that the affected land described may be mined for minerals by a licensed operator in compliance with an approved mining plan and reclamation plan. No mining may be commenced or conducted on land for which there is not in effect a valid mining permit. A mining permit shall remain valid and in force from the date of its issuance until the termination of all mining and reclamation operations, except as otherwise provided in this act;

(xii) "Spoil pile" means the overburden or any reject minerals as piled or deposited by surface or underground mining;

(xiii) "A license to mine for minerals" means the certification from the administrator that the licensee has the right to conduct mining operations on the subject lands in compliance with this act; for which a valid permit exists; that he has deposited a bond conditioned on his faithful fulfillment of the requirements thereof; and that upon investigation the

administrator has determined that the licensed mining operation is within the purposes of this act;

(xiv) "Topsoil" means soil on the surface prior to mining that will support plant life;

(xv) "Exploration by dozing" means the removal of overburden by trenching with a bulldozer or other earth moving equipment to expose possible indications of mineralization;

(xvi) "Affected land" means the area of land from which overburden is removed, or upon which overburden, development waste rock or refuse is deposited, or both, including access roads, haul roads, mineral stockpiles, mill tailings excluding uranium mill tailings, and mill facilities, within the Nuclear Regulatory Commission license area, impoundment basins excluding uranium mill tailings impoundments, and all other lands whose natural state has been or will be disturbed as a result of the operations;

(xvii) "Refuse" means all waste material directly connected with mining including overburden, reject mineral or mill tailings excluding uranium mill tailings, which have passed through a processing plant prior to deposition on affected land;

(xviii) "Alluvial valley floors" means the unconsolidated stream laid deposits holding streams where water availability is sufficient for subirrigation or flood irrigation agricultural activities but does not include upland areas which are generally overlain by a thin veneer of colluvial deposits composed chiefly of debris from sheet erosion, deposits by unconcentrated runoff or slope wash, together with talus, other mass movement accumulation and windblown deposits;

(xix) "Prime farmland" shall have the same meaning as that previously prescribed by the United States secretary of agriculture on the basis of such factors as moisture availability, temperature regime, chemical balance, permeability, surface layer composition, susceptibility to flooding and erosion characteristics, and which historically have been used for intensive agricultural purposes, and as published in the federal register;

(xx) "Surface coal mining operation" means:

(A) Activities conducted on the surface of lands in connection with a surface coal mine or with the surface

impacts incident to an underground coal mine as provided in Section 516 of P.L. 95-87. These activities include excavation for the purpose of obtaining coal including common methods as contour, strip, auger, mountaintop removal, box cut, open pit and area mining, the use of explosives and blasting, and in situ distillation or retorting, leaching or other chemical or physical processing, and the cleaning, concentrating or other processing or preparation, and the loading of coal; and

(B) The areas upon which these activities occur or where these activities disturb the land surface. These areas shall also include any adjacent land the use of which is incidental to any of these activities, all lands affected by the construction of new roads or the improvement or use of existing roads to gain access to the site of these activities and for haulage, and excavations, workings, impoundments, dams, ventilation shafts, entry ways, refuse banks, dumps, stockpiles, overburden piles, spoil banks, culm banks, tailings, holes or depressions, repair areas, storage areas, processing areas, shipping areas and other areas upon which are sited structures, facilities or other property or materials on the surface, resulting from or incident to these activities.

(xxi) "Steep slope surface coal mining operation" means a surface coal mining operation where mining occurs along the contour of a steep slope generally exceeding twenty (20) degrees and which, because of the steepness of the terrain, requires special spoil handling procedures;

(xxii) "Complete application" under W.S. 35-11-406(e) means that the application contains all the essential and necessary elements and is acceptable for further review for substance and compliance with the provisions of this chapter;

(xxiii) "Interim mine stabilization" means a temporary cessation of mining operation within the terms of a valid permit to mine;

(xxiv) "Deficiency" means an omission or lack of sufficient information serious enough to preclude correction or compliance by stipulation in the approved permit to be issued by the director;

(xxv) "Imminent or continuous threat" means, with respect to the coal mine subsidence mitigation program, physical data which shows an immediate significant threat of damage from mine subsidence or insurance claim records which support

progressive and continuous mine subsidence loss damage to structure;

(xxvi) "Fish and wildlife habitat" means land dedicated wholly or partially to the production, protection or management of species of fish or wildlife;

(xxvii) "Grazingland" includes rangelands and forestlands where the indigenous native vegetation is actively managed for grazing, browsing, occasional hay production, and occasional use by wildlife;

(xxviii) Repealed by Laws 1994, ch. 87, § 2.

(xxix) Repealed by Laws 1994, ch. 87, § 2.

(xxx) Repealed by Laws 1994, ch. 87, § 2.

(f) Specific definitions applying to in situ mining are:

(i) "Best practicable technology" means a technology based process justifiable in terms of existing performance and achievability in relation to health and safety which minimizes, to the extent safe and practicable, disturbances and adverse impacts of the operation on human or animal life, fish, wildlife, plant life and related environmental values;

(ii) "Excursion" means any unwanted and unauthorized movement of recovery fluid out of the production zone as a result of in situ mining activities;

(iii) "Groundwater restoration" means the condition achieved when the quality of all groundwater affected by the injection of recovery fluids is returned to a quality of use equal to or better than, and consistent with the uses for which the water was suitable prior to the operation by employing the best practicable technology;

(iv) "In situ mining" means a method of in-place surface mining in which limited quantities of overburden are disturbed to install a conduit or well and the mineral is mined by injecting or recovering a liquid, solid, sludge or gas that causes the leaching, dissolution, gasification, liquefaction or extraction of the mineral. In situ mining does not include the primary or enhanced recovery of naturally occurring oil and gas or any related process regulated by the Wyoming oil and gas conservation commission;

(v) "Production zone" means the geologic interval into which recovery fluids are to be injected or extracted;

(vi) "Reclamation" includes groundwater restoration;

(vii) "Recovery fluid" means any material which flows or moves, whether semi-solid, liquid, sludge, gas or other form or state, used to dissolve, leach, gasify or extract a mineral;

(viii) "Research and development testing" means conducting research and development activities to indicate mineability or workability of and develop reclamation techniques for an in situ operation.

(g) Specific definitions applying to voluntary remediation, real property remediation account and innocent owners:

(i) "Adjacent" means property contiguous to an eligible site, and contiguous or noncontiguous property onto or under which contaminants are known to have migrated from such site;

(ii) "Certificate of completion" means a certificate issued by the director stating that all remediation requirements for a site have been successfully implemented or satisfied. The certificate of completion shall incorporate any required institutional and engineering controls for future use of the site, which may include deed restrictions recorded by the site owner. A certificate of completion may be conditioned upon the duty to perform any continuing requirements specified in a remedy agreement;

(iii) "Contaminant" means any chemical, material, substance or waste:

(A) Which is regulated under any applicable federal, state or local law or regulation;

(B) Which is classified as hazardous or toxic under federal, state or local law or regulation; or

(C) To which exposure is regulated under federal, state or local law or regulation.

(iv) "Covenant not to sue" means a written pledge issued by the director stating that the state shall not sue the person or any subsequent owner concerning contaminants and liability addressed by a remedy agreement. A covenant not to sue may be conditioned upon the duty to perform any continuing requirements specified in a remedy agreement;

(v) "Engineering controls" means measures, such as capping, containment, slurry walls, extraction wells or treatment methods that are capable of managing environmental and health risks by reducing contamination levels or limiting exposure pathways;

(vi) "Governmental entity" shall have the following meaning as determined by the location of an eligible site. For the purposes of this definition, city shall include both first class cities and towns:

(A) The city, for a site located entirely within the boundary of that city;

(B) Both the city and county, for a site located partially within that city or within the extraterritorial boundary of a city;

(C) The county, for a site located outside the boundary of a city and outside the extraterritorial boundary of the city; or

(D) The federal land management agency, for a site located on lands managed by that federal agency.

(vii) "Institutional controls" means restrictions on the use of a site, including deed notices, voluntary deed restrictions or other conditions, covenants or restrictions imposed by the property owner and filed with the county clerk, use control areas, and zoning regulations or restrictions;

(viii) "No further action letter" means a letter issued by the director stating that the department has determined that no further remediation is required on the site;

(ix) "Remediation" means all actions necessary to assess, test, investigate or characterize a site, and to clean up, remove, treat, or in any other way address any contaminants that are on, in or under a site or adjacent property to prevent, minimize or mitigate harm to human health or the environment;

(x) "Site" means a parcel of real property;

(xi) "Use control area" means an area designated by a governmental entity or entities for the purpose of controlling current and future property uses;

(xii) "Bona fide prospective purchaser" means a person who acquired ownership of contaminated real property after January 11, 2002 which the person knew to be contaminated at the time of acquisition and can establish each of the following:

(A) All release or disposal of contaminants located at the real property occurred before the person acquired the property;

(B) The owner or prospective purchaser stopped all continuing releases of contamination from the property;

(C) The owner or prospective purchaser prevented any threatened future release from the existing contamination;

(D) The owner or prospective purchaser prevented or limited human, environmental and natural resource exposure to previously released hazardous substances;

(E) The department has been notified in writing of the presence of contamination;

(F) The prospective purchaser is not potentially liable or affiliated with a potentially liable party for response costs at the property through:

(I) Familial relationships;

(II) Contractual, corporate or financial relationships; or

(III) The reorganization of a potentially liable business.

(h) Specific definitions applying to municipal solid waste landfills:

(i) "Aquifer" means an underground geologic formation:

(A) Which has boundaries that may be ascertained or reasonably inferred;

(B) In which water stands, flows or percolates;

(C) Which is capable of yielding to wells or springs significant quantities of groundwater that may be put to beneficial use; and

(D) Which is capable of yielding to wells or springs which produce a sustainable volume of more than one-half (1/2) gallon of water per minute.

(ii) "Credible data" means as defined in paragraph (c)(xix) of this section;

(iii) "Groundwater" means any water, including hot water and geothermal steam, under the surface of the land or the bed of any stream, lake, reservoir or other body of surface water, including water that has been exposed to the surface by an excavation such as a pit which:

(A) Stands, flows or percolates; and

(B) Is capable of being produced to the ground surface in sufficient quantity to be put to beneficial use.

(iv) "Lifetime" means the estimated time to fill and close a municipal solid waste landfill, not to exceed twenty-five (25) years.

(j) Specific definitions applying to nuclear regulatory functions of the state as provided in article 20 of this chapter:

(i) "Byproduct material" means the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content as defined in section 11e.(2) of the Atomic Energy Act of 1954, 42 U.S.C. § 2014(e)(2), as amended;

(ii) "Recovery or milling" means any activity that generates byproduct material as defined in section 11e.(2) of the Atomic Energy Act of 1954, 42 U.S.C. § 2014(e)(2), as amended;

(iii) "Source material" means uranium or thorium, or any combination thereof, in any physical or chemical form or ores which contain by weight one-twentieth of one percent (0.05%) or more of uranium, thorium, or any combination thereof. Source material does not include special nuclear material.

35-11-104. Department of environmental quality created.

There is created a department within the executive branch entitled "The State Department of Environmental Quality" as provided in W.S. 9-2-2013.

35-11-105. Divisions enumerated.

(a) The department shall consist of the following divisions:

(i) Air quality division;

(ii) Water quality division;

(iii) Land quality division;

(iv) Solid and hazardous waste management division;

(v) Abandoned mine land division;

(vi) Industrial siting division.

35-11-106. Powers, duties, functions and regulatory authority.

(a) All powers, duties, functions and regulatory authority vested in the state office of industrial siting administration are transferred to the department, as of April 1, 1992. The performance of such acts or functions by the industrial siting division of the department shall have the same effect as if done by the former state office of industrial siting administration as referred to or designated by law, contract or other document. The reference or designation to the former state office of industrial siting administration shall now apply to the industrial siting division of the department. The industrial siting council shall retain all powers, duties, functions and regulatory authority but shall be within the department.

(b) All rules, regulations and orders of the former state office of industrial siting administration, the industrial

siting council, abandoned mine reclamation program, solid waste management program or any other program or entity transferred to the department by this act which were lawfully adopted prior to April 1, 1992 are adopted as the rules, regulations and orders of the department and shall continue to be effective until revised, amended, repealed or nullified pursuant to law.

35-11-107. Transfer of funds, records, property and personnel.

(a) All records, physical property and personnel including their rights and privileges under the merit system, retirement system and personnel system, and any appropriated or unused funds of the former state office of industrial siting administration and of the industrial siting council shall be transferred to the department as of the effective date of this act. All records, lists or other information which by law are confidential or privileged in nature shall remain as such.

(b) Repealed by Laws 1992, ch. 60, § 4.

(c) Repealed by Laws 1992, ch. 60, § 4.

(d) Repealed by Laws 1992, ch. 60, § 4.

(e) The industrial siting division is the successor to the powers, duties, functions and regulatory authority of the state office of industrial siting administration which is abolished effective April 1, 1992.

35-11-108. Appointment of director and division administrators; qualifications of director; term; salaries; employment of assistants.

The governor with the advice and consent of the senate shall appoint a director of the department who is the department's executive and administrative head. The director shall possess technical qualifications and administrative and other experience sufficient to fulfill the duties of his position. The director shall appoint administrators for each of the divisions of abandoned mine land, industrial siting, solid and hazardous waste management, air quality, water quality and land quality, who are the executive and administrative heads of their respective divisions. The administrators shall serve at the pleasure of the director and are responsible to and under the control and supervision of the director. The salary and qualifications of each administrator shall be determined by the

human resources division. The director, with the advice of the respective administrators, may employ professional, technical and other assistants, along with other employees as may be necessary to carry out the purposes of this act. The governor may remove the director as provided in W.S. 9-1-202.

35-11-109. Powers and duties of director.

(a) In addition to any other powers and duties imposed by law, the director of the department shall:

(i) Perform any and all acts necessary to promulgate, administer and enforce the provisions of this act and any rules, regulations, orders, limitations, standards, requirements or permits adopted, established or issued thereunder, and to exercise all incidental powers as necessary to carry out the purposes of this act;

(ii) Advise, consult and cooperate with other agencies of the state, the federal government, other states, interstate agencies, and other persons in furtherance of the purposes of this act;

(iii) Exercise the powers and duties conferred and imposed by this act in such a manner as to carry out the policy stated in W.S. 35-11-102;

(iv) Conduct, encourage, request and participate in, studies, surveys, investigations, research, experiments, training and demonstrations by contract, grant or otherwise; prepare and require permittees to prepare reports and install, use and maintain any monitoring equipment or methods reasonably necessary for compliance with the provisions of this act; and collect information and disseminate to the public such information as is deemed reasonable and necessary for the proper enforcement of this act;

(v) Conduct programs of continuing surveillance and of a regular periodic inspection of all actual or potential sources of pollution and of public water supplies with the assistance of the administrators;

(vi) Designate authorized officers, employees or representatives of the department to enter and inspect any property, premise or place, except private residences, on or at which an air, water or land pollution source is located or is being constructed or installed, or any premises in which any

records required to be maintained by a surface coal mining permittee are located. Persons so designated may inspect and copy any records during normal office hours, and inspect any monitoring equipment or method of operation required to be maintained pursuant to this act at any reasonable time upon presentation of appropriate credentials, and without delay, for the purpose of investigating actual or potential sources of air, water or land pollution and for determining compliance or noncompliance with this act, and any rules, regulations, standards, permits or orders promulgated hereunder. For surface coal mining operations, right of entry to or inspection of any operation, premises, records or equipment shall not require advance notice. The owner, occupant or operator shall receive a duplicate copy of all reports made as a result of such inspections within thirty (30) days. The department shall reimburse any operator for the reasonable costs incurred in producing copies of the records requested by the department under this section;

(vii) Investigate violations of this act or regulations adopted hereunder and prepare and present enforcement cases before the council; to take such enforcement action as set out in articles 6 and 7 of this act; to appear before the council on any hearing under this act;

(viii) Represent Wyoming in any matters pertaining to plans, procedures or negotiations for interstate compacts or other intergovernmental arrangements relating to environmental enhancement and protection. The director shall cooperate and participate in the negotiation and execution of consent orders, permit issuance, site investigations and remedial measures by and between federal agencies and the owners or operators of Wyoming facilities where the department has not been delegated the authority to administer and enforce federal legislation;

(ix) Accept, receive and administer any grants, gifts, loans or other funds made available from any source for the purposes of this act. Any monies received by the director pursuant to this paragraph shall be deposited with the state treasurer in the account or fund as provided by law for the purpose designated;

(x) Serve as advisor to the council, without vote, on all matters other than the consideration of rules proposed by the department or contested case proceedings in which the department is a party;

(xi) Designate authorized officers, employees or representatives of the department to monitor the air, water, and land quality, and solid waste management operations of all facilities which have been granted permits under W.S. 35-12-101 through 35-12-119, for assuring continuing compliance with conditions and requirements of their permits and for discovering and preventing noncompliance with the permits or violations of law;

(xii) Exercise all the powers granted to administrators by W.S. 35-11-110;

(xiii) Issue, deny, amend, suspend or revoke permits and licenses and determine the amount of bonds to be posted by the operator to insure reclamation of any affected lands;

(xiv) Exercise the powers and duties conferred and imposed by this act. Any person who generates, stores, treats, transports, disposes of or otherwise handles or has handled hazardous wastes shall, upon request, furnish information relating to the wastes and permit at all reasonable times the director or designated officers, employees or representatives of the department to have access to, and to copy all records relating to the wastes. For purposes of developing or assisting in the development of any hazardous waste regulation or enforcing the hazardous waste provisions of this act, the designated officers, employees or representatives are authorized to:

(A) Enter at reasonable times any establishment, property, premise or other place where hazardous wastes are or have been generated, stored, treated, disposed of or transported from; and

(B) Inspect and obtain samples from any person of the wastes and samples of any containers or labeling for the wastes.

(xv) Commence and complete with reasonable promptness each inspection conducted under paragraph (xiv) of this subsection. If an officer, employee or representative acting pursuant to paragraph (xiv) of this subsection, obtains any samples, prior to leaving the premises, he shall give to the owner, operator or agent in charge a receipt describing the sample obtained and if requested a portion of each sample equal in volume or weight to the portion retained. If any analysis is

made of the samples, a copy of the results of the analysis shall be furnished promptly to the owner, operator or agent in charge.

(b) In addition to any other powers and duties imposed by law, the director of the department may allow the permitting and reporting requirements of this act to be conducted electronically as provided by the Uniform Electronic Transaction Act, W.S. 40-21-101 through 40-21-119 and any applicable federal electronic requirements.

35-11-110. Powers of administrators of the divisions.

(a) The administrators of the air quality, land quality and water quality divisions, under the control and supervision of the director, shall enforce and administer this act and the rules, regulations and standards promulgated hereunder. Each administrator shall have the following powers:

(i) To serve as executive secretary of their respective advisory boards without vote;

(ii) To make recommendations to the director regarding the issuance, denial, amendment, suspension or revocation of permits and licenses and to make recommendations to the director regarding the amount of bond to be posted by the operator to insure reclamation of any affected lands;

(iii) To supervise studies, surveys, investigations, experiments and research projects assigned by the director and report all information gained therefrom to the director and the appropriate advisory board;

(iv) To determine the degrees of air, water or land pollution throughout the state and the several parts thereof;

(v) To administer, in accordance with this act, any permit or certification systems which may be established hereunder;

(vi) To require the owners and operators of any point source to complete plans and specifications for any application for a permit required by this act or regulations made pursuant hereto and require the submission of such reports regarding actual or potential violations of this act or regulations thereunder;

(vii) To require the owner or operator of any point source to:

(A) Establish and maintain records;

(B) Make reports;

(C) Install, use and maintain monitoring equipment or methods;

(D) Sample effluents, discharges or emissions;

(E) Provide such other information as may be reasonably required and specified.

(viii) To consult with and report to the appropriate advisory board and to make written reports of all the activities of his division to said advisory board at each of its regularly scheduled meetings;

(ix) To recommend to the director, after consultation with the appropriate advisory board, that any rule, regulation or standard or any amendment adopted hereunder may differ in its terms and provisions as between particular types, characteristics, quantities, conditions and circumstances of air, water or land pollution and its duration, as between particular air, water and land pollution services and as between particular areas of the state;

(x) To possess such further powers as shall be reasonably necessary and incidental to the proper performance of the duties imposed upon the divisions under this act.

(b) The administrator of the land quality division shall have, in addition to the powers set forth in subsection (a) of this section, the power to issue, deny, amend, suspend or revoke licenses and to determine the amount of bonds to be posted by an operator to insure reclamation of affected lands in accordance with the specific authority granted the administrator under article 4 of this act.

(c) The administrator of the solid and hazardous waste management division shall have the powers set forth in paragraphs (a)(ii) through (x) of this section.

(d) The administrator of the abandoned mine land division shall enforce and administer the provisions of W.S. 35-11-1201

through 35-11-1209 and 35-11-1301 through 35-11-1304. He shall have the powers set forth in paragraph (a)(x) of this section.

(e) The administrator of the industrial siting division shall enforce and administer the provisions of W.S. 35-12-101 through 35-12-119. He shall have the powers set forth in paragraph (a)(x) of this section.

35-11-111. Independent environmental quality council created; removal; terms; officers; meetings; expenses.

(a) There is created as a separate operating agency of state government an independent council consisting of seven (7) members to be known as the environmental quality council. Not more than seventy-five percent (75%) of the members shall be of the same political party. Council members shall be appointed by the governor with the advice and consent of the senate. The governor may remove any council member as provided in W.S. 9-1-202. No employee of the state, other than employees of institutions of higher education, shall be a member of the council. At all times, there shall be at least one (1) member from the minerals industry and one (1) member from agriculture. Any member receiving more than ten percent (10%) of his income from any permit applicant shall not act on a permit application from that applicant.

(b) The terms of the members shall be for four (4) years, except that on the initial appointment, members' terms shall be as follows: three (3) shall serve for two (2) years, two (2) shall serve for three (3) years and two (2) shall serve for four (4) years, as designated by the initial appointment. If a vacancy occurs, the governor shall appoint a new member as provided in W.S. 28-12-101.

(c) The first meeting of the council shall be held within sixty (60) days after the effective date of this act at which time a chairman shall be elected from among the members to serve a one (1) year term. The council shall also annually elect from its membership a vice-chairman and a secretary, each for a term of one (1) year, and it shall keep a record of its proceedings.

(d) The council shall hold at least four (4) regularly scheduled meetings each year. Special meetings may be called by the chairman, and special meetings shall be called by the chairman, upon a written request submitted by three (3) or more members. Four (4) members shall constitute a quorum. All matters shall be decided by a majority vote of those on the council.

(e) Unless otherwise prohibited by law, each member of the council shall receive the same per diem, mileage and salary for attending and traveling to and from meetings, hearings and other activities necessary to the performance of the duties of the office in the same manner and amount as members of the Wyoming legislature. Council members who receive compensation from their employers for activities performed pursuant to this act shall not receive salary but shall receive mileage and per diem if they are not reimbursed by their employers.

(f) Effective July 1, 1979, appointments and terms under this section shall be in accordance with W.S. 28-12-101 through 28-12-103.

35-11-112. Powers and duties of the environmental quality council.

(a) The council shall act as the hearing examiner for the department and shall hear and determine all cases or issues arising under the laws, rules, regulations, standards or orders issued or administered by the department or its air quality, land quality, solid and hazardous waste management or water quality divisions. At the council's request the office of administrative hearings may provide a hearing officer for any rulemaking or contested case hearing before the council, and the hearing officer may provide recommendations on procedural matters when requested by the council. Notwithstanding any other provision of this act, including this section, the council shall have no authority to promulgate rules or to hear or determine any case or issue arising under the laws, rules, regulations, standards or orders issued or administered by the industrial siting or abandoned mine land divisions of the department. The council shall:

(i) Promulgate rules and regulations necessary for the administration of this act, after recommendation from the director of the department, the administrators of the various divisions and their respective advisory boards;

(ii) Conduct hearings as required by the Wyoming Administrative Procedure Act for the adoption, amendment or repeal of rules, regulations, standards or orders recommended by the advisory boards through the administrators and the director. The council shall approve all rules, regulations, standards or orders of the department before they become final;

(iii) Conduct hearings in any case contesting the administration or enforcement of any law, rule, regulation, standard or order issued or administered by the department or any division thereof;

(iv) Conduct hearings in any case contesting the grant, denial, suspension, revocation or renewal of any permit, license, certification or variance authorized or required by this act;

(v) Designate at the earliest date and to the extent possible those areas of the state which are very rare or uncommon and have particular historical, archaeological, wildlife, surface geological, botanical or scenic value. When areas of privately owned lands are to be considered for such designation, the council shall give notice to the record owner and hold hearing thereon, within a county in which the area, or major portion thereof, to be so designated is located, in accordance with the Wyoming Administrative Procedure Act. No new designations shall be made pursuant to this paragraph after July 1, 2011, but the council shall retain the authority to remove designations made prior to that date;

(vi) Adopt and when applicable, enforce the provisions of rule 11 of the Wyoming Rules of Civil Procedure in a contested hearing conducted by the council. The council may modify the procedural provisions of rule 11 to fit the circumstances of a hearing before the council and sanctions imposed by the council. If the provisions of rule 11 are modified at a future date, the council may adopt the modifications.

(b) The council may contract with consultants having special expertise to assist in the performance of its duties.

(c) Subject to any applicable state or federal law, and subject to the right to appeal, the council may:

(i) Approve, disapprove, repeal, modify or suspend any rule, regulation, standard or order of the director or any division administrator;

(ii) Order that any permit, license, certification or variance be granted, denied, suspended, revoked or modified;

(iii) Affirm, modify or deny the issuance of orders to cease and desist any act or practice in violation of the

laws, rules, regulations, standards or orders issued or administered by the department or any division thereof. Upon application by the council, the district court of the county in which the act or practice is taking place shall issue its order to comply with the cease and desist order, and violation of the court order may be punished as a contempt.

(d) The director and his staff shall provide the council with meeting facilities, secretarial or clerical assistance, supplies and such other assistance as the council may require in the performance of its duties.

(e) Upon request, the attorney general shall provide such legal assistance as the council may require in the conduct of its hearings, writing of its decisions or the enforcement of its orders. The council may employ independent legal assistance as necessary to the proper performance of its duties.

(f) All proceedings of the council shall be conducted in accordance with the Wyoming Administrative Procedure Act.

35-11-113. Advisory boards created; membership; removal; terms; meetings; expenses.

(a) There is created within the department three (3) advisory boards, one (1) for each of the air quality, land quality and water quality divisions. Each advisory board shall consist of five (5) members appointed by the governor. Each board shall have one (1) member who represents industry, one (1) member who represents agriculture, one (1) member who represents political subdivisions and two (2) members who represent the public interest. The governor may remove any member of any of the advisory boards as provided in W.S. 9-1-202.

(b) For the initial appointments to each board, the governor shall appoint one (1) member for a six (6) year term, two (2) members for four (4) year terms and two (2) members for two (2) year terms. Thereafter all appointments shall be for four (4) year terms. No officer or employee of the state, other than employees of institutions of higher education, may be appointed to a board. A vacancy occurs if any member ceases to represent the interest group or political party for which he was originally appointed, or if any member becomes unable or fails to serve for any reason. The governor shall fill vacancies by appointment for the unexpired portion of the term.

(c) Each advisory board shall meet within sixty (60) days after the effective date of this act to elect from among its members a chairman and a vice-chairman. Such officers shall be elected annually thereafter. Each board shall hold at least four (4) regularly scheduled meetings each year, and special meetings may be called by the chairman at any time. Three (3) members shall constitute a quorum for the purpose of conducting business, but all decisions must be approved by a majority of the total membership of the board. Each board shall keep a written record of its meetings and proceedings. Each board member shall be reimbursed for per diem, mileage and expenses for attending board meetings in the same manner and amount as state employees.

35-11-114. Powers and duties of the advisory boards.

(a) The advisory board shall recommend to the council through the administrator and director, comprehensive plans and programs for the management of solid and hazardous waste, the prevention, control and abatement of air, water and land pollution and the protection of public water supplies.

(b) The advisory board shall recommend to the council through the administrator and director the adoption of rules, regulations and standards to implement and carry out the provisions and purposes of this act which relate to their divisions, and variances therefrom.

(c) The advisory boards shall counsel with and advise the administrator of their respective divisions in the administration and performance of all the duties of the division and shall make an annual written report to the governor.

(d) The advisory board shall counsel with and advise each other, the public, and the director of the department in order to coordinate the policies and activities of their respective divisions and to achieve maximum efficiency and effectiveness in furthering the objectives of the department.

(e) Each administrator and staff shall provide the appropriate board with meeting facilities, secretarial or clerical assistance, supplies and such other assistance as each board may require in the performance of its duties.

35-11-115. Power of director to issue emergency orders.

(a) Any other provisions of law to the contrary notwithstanding, if the director finds that a condition of air, water or land pollution exists and that it creates an emergency requiring immediate action to protect human or animal health or safety, the director, with the concurrence of the governor, shall order any persons causing or contributing to such pollution to reduce or discontinue immediately the actions causing the condition of pollution and such order shall fix a time and place for hearing before the council within forty-eight (48) hours thereafter. The council shall affirm, modify or set aside the director's order within forty-eight (48) hours following the adjournment of the hearing.

(b) If the director has evidence that any pollution source presents an immediate and substantial danger to human or animal health or safety, he may institute, through the attorney general, a civil action for immediate injunctive relief to halt any activity causing the danger. The court may issue an ex-parte order and shall schedule a hearing on the matter within three (3) working days from the date the petition for injunctive relief is filed.

(c) Nothing in this section shall be construed to limit any power which the governor or any other officer may have to declare an emergency and act on the basis of such declaration, if such power is conferred by statute or constitutional provision or inheres in the office.

ARTICLE 2
AIR QUALITY

35-11-201. Discharge or emission of contaminants; restrictions.

No person shall cause, threaten or allow the discharge or emission of any air contaminant in any form so as to cause pollution which violates rules, regulations and standards adopted by the council.

35-11-202. Establishment of standards.

(a) Without limiting the authority of the administrator as set out in W.S. 35-11-110, he shall, after consultation with the advisory board, recommend to the director such ambient air standards or emission control requirements by rule or regulation, as may be necessary to prevent, abate, or control pollution. Such standards or requirements may be for the state

as a whole or may vary from area to area, as may be appropriate to facilitate accomplishment of the purposes of this act, and in order to take account of varying local conditions.

(b) In recommending such standards or requirements the administrator shall:

(i) Consider all the facts and circumstances bearing upon the reasonableness of the emissions involved, including:

(A) The character and degree of injury to, or interference with the health and physical well being of the people, animals, wildlife and plant life;

(B) The social and economic value of the source of pollution;

(C) The priority of location in the area involved;

(D) The technical practicability and economic reasonableness of reducing or eliminating the pollution; and

(E) The social welfare and aesthetic value.

(ii) Grant such time as he shall find to be reasonable and necessary for owners and operators of air contaminant sources to comply with applicable standards or requirements;

(iii) Recommend to the director, after consultation with the advisory board, regulations to prevent construction, modification or operation of any source at any location where emissions from such source will prevent the attainment or maintenance of a state or national standard.

35-11-203. Sources subject to operating permit program.

(a) The following sources of air contaminants are subject to the provisions of W.S. 35-11-203 through 35-11-212:

(i) Any stationary source, or any group of stationary sources located within a contiguous area and under common control, that:

(A) Has the potential to emit one hundred (100) tons or more per year of any pollutant regulated under the Clean

Air Act and is a major stationary source as defined in section 302 of the Clean Air Act;

(B) Has the potential to emit ten (10) tons per year of any single hazardous air pollutant or twenty-five (25) tons per year of any combination of hazardous air pollutants as defined by section 112 of the Clean Air Act. Emissions from any oil or gas exploration or production well (with its associated equipment) and emissions from any pipeline compressor or pump station shall not be aggregated with emissions from other similar units, whether or not such units are in a contiguous area or under common control, to determine whether such units or stations are major sources; or

(C) Is subject to the nonattainment area provisions of title I, part D, of the Clean Air Act.

(ii) Any other source of hazardous air pollutants, including an area source, which the environmental protection agency may designate pursuant to the provisions of section 112 of the Clean Air Act;

(iii) Any source subject to the new source performance standards promulgated by the environmental protection agency pursuant to section 111 of the Clean Air Act;

(iv) Any "affected source" subject to the acid rain provisions of title IV of the Clean Air Act as defined in section 501 of the Clean Air Act;

(v) Any source subject to preconstruction review permits pursuant to the prevention of significant deterioration regulations promulgated by the environmental protection agency pursuant to the Clean Air Act;

(vi) Any other stationary source that the environmental protection agency may designate by regulation pursuant to authority granted under the Clean Air Act.

(b) After the effective date of the operating permit program authorized under W.S. 35-11-203 through 35-11-212, it shall be unlawful for any person to violate any requirement of a permit issued under the operating permit program or to operate any source required to have a permit under this section, without having complied with the provisions of the operating permit program.

(c) The department shall exempt any nonmajor source from the obligation to obtain a permit under this section until the environmental protection agency requires such sources to obtain an operating permit in final regulations promulgated pursuant to title V of the Clean Air Act.

35-11-204. Department to establish requirements for applications; certification.

(a) The department shall promulgate rules for permit applications, including standard application forms to be submitted pursuant to the operating permit program. The rules shall:

(i) Establish specific criteria for defining a complete permit application, including information which identifies a source, its applicable air pollution control requirements, current compliance status, intended operating regime and emissions levels;

(ii) Provide for adequate, streamlined and reasonable procedures for determining when an application is complete and for processing an application; and

(iii) Provide for public notice of the application, and opportunity for public comment and public hearings.

(b) The application, including any information required to be submitted with the application pursuant to this section shall be signed by a responsible official who shall certify the accuracy of the information.

(c) Operating permit applications are not required until after the date that the environmental protection agency has issued approval of the state's permit program, or by November 15, 1995, whichever comes first.

35-11-205. Application procedures.

(a) Any source required to have a permit under W.S. 35-11-203 shall, not later than twelve (12) months after the date on which the source becomes subject to the requirements of the operating permit program or such earlier date as the department may establish, submit to the department a compliance plan and an application for a permit signed by a responsible official, who shall certify the accuracy of the information submitted. The department shall approve or disapprove a

completed application, consistent with the procedures established under W.S. 35-11-204 for consideration of such applications, and shall issue or deny the permit, within eighteen (18) months after the date of receipt thereof, except that the department shall establish a phased schedule for acting on permit applications submitted within the first full year after the effective date of the operating permit program, or a partial or interim program. Any such schedule shall assure that at least one-third (1/3) of the permits will be acted on by the department annually over a period of not to exceed three (3) years after the effective date. The department shall establish reasonable procedures to prioritize approval or disapproval actions in the case of applications for construction or modification under the applicable requirements of the Clean Air Act and this article.

(b) Any source submitting a permit application shall submit with the application a compliance plan describing how the source will comply with all applicable requirements under this article and the Clean Air Act. The compliance plan shall include a schedule of compliance, and a schedule under which the permittee will submit progress reports to the department no less frequently than every six (6) months.

(c) Except for sources required to have a permit before construction or modification under the applicable requirements of this article or the Clean Air Act, if an applicant has submitted a timely and complete application for a permit or a renewal of a permit required by the operating permit program, but final action has not been taken on the application, the source's failure to have a permit shall not be a violation of W.S. 35-11-203, unless the delay in final action was due to the failure of the applicant to timely submit information required or requested to process the application. No source required to have a permit under the operating permit program shall be in violation of W.S. 35-11-203 before the date on which the source is required to submit an application under subsection (a) of this section.

(d) A copy of each permit application, compliance plan, schedule of compliance, emissions or compliance monitoring report, certification, and each permit issued under the operating permit program, shall be available to the public. If an applicant or permittee is required to submit information entitled to protection from disclosure under section 114(c) of the Clean Air Act, W.S. 35-11-1101(a) or 16-4-203(d)(v), the applicant or permittee may submit the information separately.

The requirements of section 114(c), W.S. 35-11-1101(a) and 16-4-203(d)(v) shall apply to the information. The contents of a permit shall not be entitled to protection under section 114(c), W.S. 35-11-1101(a) or 16-4-203(d)(v).

35-11-206. Operating permit requirements and conditions.

(a) Every permit issued under the operating permit program shall include enforceable emission limitations and standards, a schedule of compliance, a requirement that the permittee submit to the department no less often than every six (6) months, the results of any required monitoring, and other conditions as are necessary to assure compliance with applicable requirements established pursuant to this article and the Clean Air Act.

(b) The department may by rule prescribe procedures and methods for determining compliance and for monitoring and analysis of pollutants regulated under the Clean Air Act and this article, but continuous emissions monitoring need not be required if alternative methods are available that provide sufficiently reliable and timely information for determining compliance. Nothing in this subsection shall be construed to affect any continuous emissions monitoring requirement of title IV of the Clean Air Act, or where required elsewhere in the Clean Air Act.

(c) Every permit issued under the operating permit program shall set forth inspection, entry, monitoring, compliance certification and reporting requirements to assure compliance with the permit terms and conditions. Monitoring and reporting requirements shall conform to any applicable regulation under subsection (b) of this section. Any report required to be submitted by a permit issued to a corporation under the operating permit program shall be signed by a responsible corporate official, who shall certify its accuracy.

(d) The department may, after notice and opportunity for public hearing, issue a general permit covering numerous similar sources. Any general permit shall comply with all requirements applicable to permits under title V of the Clean Air Act and the operating permit program. No source covered by a general permit shall thereby be relieved from the obligation to file an application under W.S. 35-11-205.

(e) The department may issue a single permit authorizing emissions from similar operations at multiple temporary locations. No such permit shall be issued unless it includes

conditions that will assure compliance with all the requirements of the operating permit program and the Clean Air Act at all authorized locations, including, but not limited to, ambient standards and compliance with any applicable increment or visibility requirements under part C of title I of the Clean Air Act. Any such permit shall in addition require the owner or operator to notify the department in advance of each change in location. The department may require a separate permit fee for operations at each location.

(f) Every permit issued pursuant to the operating permit program shall:

(i) Be issued for a fixed term of five (5) years unless the department makes a finding, after public comment and hearing, and based on substantial evidence in the record, that an operating permit term of less than five (5) years is necessary to protect the public health and the environment except that operating permits to any affected source as defined in section 501 of the Clean Air Act shall be issued for no less and no more than five (5) years;

(ii) Be subject to termination, modification, revocation or reissuance for cause;

(iii) Allow for operational flexibility at the permitted facility without revising the permit; and

(iv) Be subject to revision by the department to incorporate applicable requirements under the Clean Air Act and this article which are promulgated after the permit is issued if the remaining term of the permit is for a term of three (3) or more years. Any revision required by this paragraph shall be acted on by the department within the time limits provided in W.S. 35-11-205(a).

35-11-207. Notification to the environmental protection agency and contiguous states.

(a) The department shall transmit to the environmental protection agency:

(i) A copy of each permit application and any application for a permit modification or renewal or any portion thereof including any compliance plan, as the environmental protection agency may require to effectively review the

application and otherwise carry out its responsibilities under the Clean Air Act; and

(ii) A copy of each permit proposed to be issued and issued as a final permit.

(b) The department shall provide notice of each permit application or proposed permit forwarded to the environmental protection agency under this section, to all states:

(i) Whose air quality may be affected and that are contiguous to this state; or

(ii) That are within fifty (50) miles of the source.

(c) The department shall provide an opportunity for states notified pursuant to subsection (b) of this section to submit written recommendations respecting the issuance of the permit and its terms and conditions. If any part of those recommendations are not accepted by the department it shall notify the state submitting the recommendations and the environmental protection agency in writing of its failure to accept those recommendations and the reasons therefor.

(d) Upon receipt of timely objection by the environmental protection agency under title V of the Clean Air Act the department shall not issue any permit under the operating permit program unless it is revised and issued in accordance with section 505(c) of the Clean Air Act. Any permit issued under the operating permit program shall be subject to revocation or revision by the department throughout the period of time that EPA may object under title V of the Clean Air Act.

35-11-208. Review of actions on applications.

(a) An applicant may seek relief pursuant to W.S. 35-11-802 on any final action taken on a permit including the director's refusal to grant a permit under the operating permit program or failure to act on a completed application within eighteen (18) months.

(b) Any person who participated in the public comment process on a permit application and who is aggrieved by any final action taken by the director on a permit application may seek relief pursuant to W.S. 35-11-1001.

35-11-209. Small business stationary source technical and environmental compliance assistance program.

(a) The department shall act as ombudsman for small business stationary sources in connection with implementation of the operating permit program and the Clean Air Act.

(b) As ombudsman the department shall, in accordance with section 507 of the Clean Air Act, submit to the environmental protection agency plans for establishing a small business stationary source technical and environmental compliance assistance program.

(c) The program shall be implemented by rules adopted by the department and shall contain:

(i) Adequate mechanisms for developing, collecting and coordinating information concerning compliance methods and technologies for small business stationary sources, and programs to encourage lawful cooperation among such sources and other persons to further compliance with the Clean Air Act;

(ii) Adequate mechanisms for assisting small business stationary sources with pollution prevention and accidental release detection and prevention, including providing information concerning alternative technologies, process changes, products and methods of operation that help reduce air pollution;

(iii) A compliance assistance program for small business stationary sources which assists small business stationary sources in determining applicable requirements and in receiving permits under the operating permit program and the Clean Air Act in a timely and efficient manner;

(iv) Adequate mechanisms to assure that small business stationary sources receive notice of their rights under the Clean Air Act in a manner and form as to assure reasonably adequate time for such sources to evaluate compliance methods and any relevant or applicable proposed or final regulation or standard issued under the operating permit program or the Clean Air Act;

(v) Adequate mechanisms for informing small business stationary sources of their obligations under the operating permit program and the Clean Air Act, including mechanisms for referring such sources to qualified auditors or, at the option

of the state, for providing audits of the operations of such sources to determine compliance with the Clean Air Act;

(vi) Procedures for consideration of requests from a small business stationary source for modification of:

(A) Any work practice or technological method of compliance; or

(B) The schedule of milestones for implementing a work practice or method of compliance preceding any applicable compliance date, based on the technological and financial capability of the small business stationary source. No modification may be granted unless it is in compliance with the applicable requirements established pursuant to this article, the Clean Air Act, and the requirements of the operating permit program.

(d) Except as provided in subsection (e) of this section, for purposes of this section, "small business stationary source" means a stationary source that:

(i) Is owned or operated by a person that employs one hundred (100) or fewer individuals;

(ii) Is a small business concern as defined in the Small Business Act;

(iii) Is not a major stationary source as defined in W.S. 35-11-203(a)(i)(A);

(iv) Does not emit fifty (50) tons or more per year of any regulated pollutant; and

(v) Emits less than seventy-five (75) tons per year of all regulated pollutants.

(e) Upon petition by a source, the department may, after notice and opportunity for public comment, include as a small business stationary source for purposes of this section any stationary source which does not meet the criteria of paragraph (d)(iii), (iv) or (v) of this section but which does not emit more than one hundred (100) tons per year of all regulated pollutants.

(f) The department, in consultation with the environmental protection agency and the administrator of the small business

administration and after providing notice and opportunity for public hearing, may exclude from the small business stationary source definition under this section any category or subcategory of sources that the department determines to have sufficient technical and financial capabilities to meet the requirements of the Clean Air Act without the application of this section.

35-11-210. Small business assistance program advisory panel.

(a) There is created a compliance advisory panel consisting of the following nine (9) members:

(i) Two (2) members, who are not owners, or representatives of owners, of small business stationary sources, shall be appointed by the governor to represent the general public;

(ii) Four (4) members shall be appointed by the legislature who are owners, or who represent owners of small business stationary sources. One (1) member each shall be appointed by the majority and minority leadership of the house of representatives and one (1) member each shall be appointed by the majority and minority leadership of the senate;

(iii) One (1) member shall be selected by the director of the department to represent the department;

(iv) Two (2) members who represent major source operators in the state of Wyoming, shall be appointed by the governor.

(b) The panel shall:

(i) Render advisory opinions concerning the effectiveness of the small business stationary source technical and environmental compliance assistance program, difficulties encountered, and degree and severity of enforcement;

(ii) Make periodic reports to the environmental protection agency required under title V of the Clean Air Act;

(iii) Review information for small business stationary sources to assure such information is understandable by the layperson; and

(iv) Have the small business stationary source technical and environmental compliance assistance program serve as the secretariat for the development and dissemination of such reports and advisory opinions.

(c) Except for the initial members the panel members shall serve four (4) year terms and may be reappointed. The legislative members appointed from the house of representatives shall initially serve two (2) year terms. One (1) member appointed by the governor shall initially serve a three (3) year term. A vacancy occurs if a member ceases to meet the qualifications specified in subsection (a) of this section. A vacancy shall be filled in the same manner as the original appointment. The panel shall select from its members a chairman. The panel shall hold at least four (4) regularly scheduled meetings each year, and may hold special meetings as called by the chairman. Five (5) members shall constitute a quorum for the purposes of conducting business, but all decisions must be approved by a majority of the total membership of the panel. Each member, except the department representative, shall be reimbursed for per diem, mileage and expenses for attending panel meetings in the same manner and amount as state employees. The department representative shall suffer no loss of wages for the time devoted to the duties of the panel.

(d) The panel shall be in addition to and operate separate from the advisory boards created pursuant to W.S. 35-11-113.

35-11-211. Fees.

(a) The department shall implement a permit fee system and schedule of fees adequate to cover all reasonable direct and indirect costs of reviewing and acting upon any construction and modification permits under this article and developing, implementing and administering the operating permit program including the small business technical assistance program.

(b) Permit fees shall be assessed against operators of sources applying for any permit under this article and annually thereafter for the duration of the permit. The fee for operating sources shall be based on the emissions of each regulated pollutant, as defined in section 502(b)(3)(B)(ii) of the Clean Air Act. The department shall exclude any amount of regulated pollutant emitted by any source in excess of four thousand (4,000) tons per year in determining the amount of fee required for any operating source. A fee shall be assessed upon applicants for construction and modification permits based on

costs to the department in reviewing and acting upon those permit applications. The department shall develop a fee structure which equitably assesses the fees based on emissions for operating sources and projected costs of reviewing and acting upon construction and modification permits sufficient to recover the amount reviewed by the joint appropriations committee and appropriated by the legislature for implementing the operating permit program. The fee structure and appropriation shall be based upon measurable goals and approved by the joint appropriations committee prior to implementation. The department shall prepare a biennium report for review by the joint minerals, business and economic development committee by October 31 of the year prior to the Wyoming legislative budget session. Permit fees shall cover all reasonable direct and indirect costs including the costs of:

(i) Reviewing and acting upon any permit application including construction and modification permit applications;

(ii) Implementing and enforcing permits;

(iii) Emissions and ambient monitoring;

(iv) Preparing regulations and guidance;

(v) Modeling analyses and demonstrations;

(vi) Preparing emission and source inventories and tracking emissions;

(vii) Permit-related functions performed by the department;

(viii) Development and administration of the state small business assistance program; and

(ix) Information management activities.

(c) The fees collected by the department pursuant to this section shall be deposited in a separate account, and shall be subject to appropriation by the legislature to the department solely for permitting construction and modification and for the development and administration of the construction, modification and operating permit programs.

(d) The department shall give written notice of the amount of the fee to be assessed and the basis for the assessment to

the operator of the source. The operator may appeal the assessment to the council within twenty (20) days after receipt of the written notice. The appeal shall be based only upon the allegation that the particular assessment is erroneous or excessive and may not be based upon the entire fee schedule adopted to fund the permitting programs. The contested case procedures of the Wyoming Administrative Procedure Act shall apply to any appeal under this subsection.

(e) If any part of the assessment is not appealed it shall be paid to the department upon receipt of the written notice.

(f) The department may reduce any fee required under the operating permit program to take into account the financial resources of small business stationary sources.

(g) There shall be no double counting of the regulated emissions for the purpose of fee determination.

(h) Fees under this section, for sources subject to the operating permit program as enumerated in W.S. 35-11-203(a), shall not be assessed for tailpipe emissions from any nonroad vehicle as defined under section 201 of the Clean Air Act.

35-11-212. Effect of other provisions.

(a) Nothing in W.S. 35-11-203 through 35-11-212 shall be construed as affecting allowances under the allowance program and phase II compliance schedule under the acid rain provisions of title IV of the federal Clean Air Act.

(b) Nothing in W.S. 35-11-203 through 35-11-212 shall be construed as affecting the department's permitting or other regulation of the construction or modification of sources pursuant to W.S. 35-11-202 including rules in effect as of April 1, 1992 or subsequently promulgated under W.S. 35-11-202.

35-11-213. Restrictions on state regulations related to greenhouse gas emissions.

(a) Effective March 31, 1999, neither the department nor the council shall propose or promulgate any new rule or regulation intended in whole or in part to reduce emissions as called for by the Kyoto Protocol, from the residential, commercial, industrial, electric utility, transportation, agricultural, energy or mining sectors.

(b) In the absence of a resolution or other act of the legislature approving same, the director of the department shall not submit to the United States environmental protection agency or to any other agency of the federal government any legally enforceable commitments related to the Kyoto Protocol.

(c) Nothing in this section shall be construed to limit or to impede state or private participation in any on-going voluntary initiatives to reduce emissions of greenhouse gases, including, but not limited to, the United States environmental protection agency's green lights program, the United States department of energy's climate challenge program and similar state and federal initiatives relying on voluntary participation.

(d) This section shall remain in effect until repealed by an act of the Wyoming legislature or until ratification of the Kyoto Protocol by the United States senate and enactment of federal legislation implementing the Kyoto Protocol.

(e) Notwithstanding the provisions of subsections (a) through (d) of this section and pursuant to the provisions of subsections (e) through (k) of this section, the department and council shall adopt regulations to amend Wyoming's Clean Air Act state implementation plan and Wyoming's Title V operating permit program to the extent necessary to obtain state primacy over the regulation of greenhouse gases for those sources that would otherwise be subject to federal regulation for greenhouse gases by the United States environmental protection agency. The department and council may promulgate new source performance standards for greenhouse gases that are no more stringent than federal greenhouse gas new source performance standards.

(f) In no event shall any greenhouse gas emission regulations, new source performance standards or potential to emit thresholds promulgated pursuant to subsection (e) of this section be more stringent than those imposed or required by federal law. Regulations under subsection (e) of this section shall only regulate those gases identified by the United States environmental protection agency as greenhouse gases.

(g) Notwithstanding W.S. 35-11-203(a), the department and the council are authorized to determine by regulation potential to emit thresholds for greenhouse gas emissions which are no more stringent than those imposed or required by federal law.

(h) The department may submit an amended state implementation plan providing for regulation of greenhouse gases to the United States environmental protection agency for approval.

(i) Repealed By Laws 2013, Ch. 39, § 2.

(ii) Repealed By Laws 2013, Ch. 39, § 2.

(j) Subsections (e) through (k) of this section and the authority granted in subsection (e) of this section to the department and the council to promulgate and adopt greenhouse gas regulations and all regulations adopted pursuant to subsection (e) of this section are repealed upon the occurrence of any one (1) of the following events:

(i) The United States congress enacts a law prohibiting the United States environmental protection agency from regulating greenhouse gases; or

(ii) A federal court issues a final judgment prohibiting the United States environmental protection agency from regulating greenhouse gas emissions from stationary sources.

(k) As used in this section, the term "final judgment" means a judgment issued by a federal court that is no longer subject to potential or ongoing appeal to any federal court with jurisdiction over the court judgment.

(m) The governor shall certify to the secretary of state the occurrence of any act which repeals subsections (e) through (k) of this section pursuant to subsection (j) of this section. The effective date of such repeal of subsections (e) through (k) of this section shall be the date the governor's certification is filed with the secretary of state.

(i) Repealed By Laws 2013, Ch. 39, § 2.

(ii) Repealed By Laws 2013, Ch. 39, § 2.

35-11-214. Emission trading programs.

The department through rule and regulation may establish intrastate, participate in interstate, or establish intrafacility emissions trading programs. Any trading program established shall be consistent with the Clean Air Act and

regulations promulgated thereunder, and consistent with ambient air quality standards.

ARTICLE 3
WATER QUALITY

35-11-301. Prohibited acts.

(a) No person, except when authorized by a permit issued pursuant to the provisions of this act, shall:

(i) Cause, threaten or allow the discharge of any pollution or wastes into the waters of the state;

(ii) Alter the physical, chemical, radiological, biological or bacteriological properties of any waters of the state;

(iii) Construct, install, modify or operate any sewerage system, treatment works, disposal system or other facility, excluding uranium mill tailing facilities, capable of causing or contributing to pollution, except that no permit to operate shall be required for any publicly owned or controlled sewerage system, treatment works or disposal system;

(iv) Increase the quantity or strength of any discharge;

(v) Construct, install, modify or operate any public water supply or construct any subdivision water supply, except that no permit to operate shall be required for any publicly owned or controlled public water supply and a permit under this section shall not be required for subdivision water supplies consisting of individual wells serving individual lots of a subdivision.

35-11-302. Administrator's authority to recommend standards, rules, regulations or permits.

(a) The administrator, after receiving public comment and after consultation with the advisory board, shall recommend to the director rules, regulations, standards and permit systems to promote the purposes of this act. Such rules, regulations, standards and permit systems shall prescribe:

(i) Water quality standards specifying the maximum short-term and long-term concentrations of pollution, the

minimum permissible concentrations of dissolved oxygen and other matter, and the permissible temperatures of the waters of the state;

(ii) Effluent standards and limitations specifying the maximum amounts or concentrations of pollution and wastes which may be discharged into the waters of the state;

(iii) Standards for the issuance of permits for construction, installation, modification or operation of any public water supply and sewerage system, subdivision water supply, treatment works, disposal system or other facility, capable of causing or contributing to pollution;

(iv) Standards for the definition of technical competency and the certification of operating personnel for community water systems and nontransient noncommunity water systems, sewerage systems, treatment works and disposal systems and for determining that the operation shall be under the supervision of certified personnel. Prior to recommending these standards to the director, the administrator shall consult with affected municipalities, water and sewer districts, counties and treatment operators;

(v) Standards for the issuance of permits as authorized pursuant to section 402(b) of the Federal Water Pollution Control Act as amended in 1972, and as it may be hereafter amended;

(vi) In recommending any standards, rules, regulations, or permits, the administrator and advisory board shall consider all the facts and circumstances bearing upon the reasonableness of the pollution involved including:

(A) The character and degree of injury to or interference with the health and well being of the people, animals, wildlife, aquatic life and plant life affected;

(B) The social and economic value of the source of pollution;

(C) The priority of location in the area involved;

(D) The technical practicability and economic reasonableness of reducing or eliminating the source of pollution; and

(E) The effect upon the environment.

(vii) Such reasonable time as may be necessary for owners and operators of pollution sources to comply with rules, regulations, standards or permits;

(viii) Financial assurance requirements for plugging, abandonment, post-closure monitoring and corrective actions, if required, for any underground injection facility for hazardous wastes as defined in Title 40 of the Code of Federal Regulations, Part 146, Subpart G;

(ix) Standards for housed facilities where swine are confined, fed and maintained for a total of forty-five (45) consecutive days or more in any twelve (12) month period and the feedlot or facility is designed to confine an equivalent of one thousand (1,000) or more animal units. If any county adopts a land use plan or zoning resolution which imposes stricter requirements than those found in subparagraph (C) of this paragraph, the county requirements shall prevail. These standards shall include:

(A) Financial assurance for accidents and closure requirements for facilities which contain treatment works;

(B) Waste and manure management plans to prevent pollution of waters of the state, to minimize odors for public health concerns, pathogens and vectors capable of transporting infectious diseases and to specify land application requirements;

(C) Setback requirements which will restrict the location and operation of structures housing swine and lagoons within:

(I) One (1) mile of an occupied dwelling without the written consent of the owner of the house;

(II) One (1) mile of a public or private school without the consent of the school's board of trustees or board of directors;

(III) One (1) mile of the boundaries of any incorporated municipality without the resolution and consent of the governing body of the municipality;

(IV) One-quarter (1/4) mile of a water well permitted for current domestic purposes without the written consent of the owner of the well;

(V) One-quarter (1/4) of a mile of a perennial stream unless it is demonstrated to the department that potential adverse impacts to the water quality of the stream can be avoided.

(D) Provisions for notice of intent to issue a permit and opportunity for public comment.

(x) Standards for the determination of capacity development capabilities to ensure that all new or modified community water systems and new or modified nontransient noncommunity water systems commencing operation after October 1, 1999, demonstrate capacity development capabilities and by October 1, 2001, develop a strategy to assist all community and noncommunity water systems in acquiring and maintaining capacity development by adopting procedures governing capacity development in compliance with section 1420 of the Safe Drinking Water Act (42 U.S.C. § 300g-9). The department shall have the authority to require new systems in noncompliance of capacity development capabilities to take steps to correct inadequacies or cease water system operations;

(xi) Standards for subdivision applications submitted to the department under W.S. 18-5-306. The administrator shall consult with county commissioners and the state engineer's office in developing standards to recommend to the director.

(b) The administrator, after receiving public comment and after consultation with the advisory board, shall recommend to the director rules, regulations and standards to promote the purposes of this act. The rules, regulations and standards shall prescribe:

(i) A schedule for the use of credible data in designating uses of surface water consistent with the requirements of the Federal Water Pollution Control Act (33 U.S.C. sections 1251 through 1387). The use of credible data shall include consideration of soils, geology, hydrology, geomorphology, climate, stream succession and human influence on the environment. The exception to the use of credible data may be in instances of ephemeral or intermittent water bodies where chemical or biological sampling is not practical or feasible;

(ii) The use of credible data in determining water body's attainment of designated uses. The exception to the use of credible data may be in instances where numeric standards are exceeded, or in ephemeral or intermittent water bodies where chemical or biological sampling is not practical or feasible.

(c) Nothing in this act shall be construed to supersede or abrogate any valid water right. It is recognized that diversion of water caused by the exercise of a valid water right is an allowable practice. The administrator shall:

(i) Develop water quality standards for surface waters where hydrologic modification resulting from the exercise of valid water rights precludes the attainment of existing water quality standards;

(ii) Prepare a schedule to develop appropriate water quality standards based on the completion of a use attainability analysis for any waters that have been identified pursuant to 33 U.S.C. § 1315(b) where dams, diversions or other types of hydrologic modification preclude the attainment of any existing water quality standard.

35-11-303. Duties of the administrator of water quality division.

(a) In addition to other duties imposed by law, the administrator of the water quality division at the direction of the director:

(i) May conduct on site compliance inspections of all facilities and works during or following the completion of any construction, installation or modification for which a permit is issued under W.S. 35-11-301(a)(iii) or (v); and

(ii) Shall establish as necessary for the efficient enforcement of this act water quality districts within the state and provide for a field office to be located within the boundaries of each district created.

35-11-304. Administrator required to delegate certain management functions to local governmental entities.

(a) To the extent requested by a municipality, water and sewer district or county, the administrator of the water quality division, with the approval of the director, shall delegate to

municipalities, water and sewer districts or counties which apply the authority to enforce and administer within their boundaries the provisions of W.S. 35-11-301(a)(iii) and (v), including the authority to develop necessary rules, regulations, standards and permit systems and to review and approve construction plans, conduct inspections and issue permits. Any authority delegated under this section shall be subject to the following conditions:

(i) The delegation of authority under this section is limited to small wastewater facilities, publicly owned or controlled sewage collection and water distribution facilities and publicly owned or controlled nondischarging treatment works;

(ii) The delegation of authority under this section shall be by written agreement signed by the administrator and the local elected representative empowered to do so;

(iii) The local governmental entity has established rules, regulations and standards for the issuance of permits required under W.S. 35-11-301(a)(iii) and (v) which standards shall be at least as stringent as those promulgated by the state under W.S. 35-11-302(a)(iii);

(iv) The local governmental entity shall demonstrate to the administrator that all facilities will be approved by a registered professional engineer or city or county sanitarian for small wastewater facilities or other qualified individual approved by the water quality division administrator, and that it employs a properly certified waste treatment plant operator responsible for operation and maintenance of the treatment works in a manner at least as stringent as the department of environmental quality would require;

(v) The administrator shall periodically review the standards and administrative and enforcement programs of each local governmental entity receiving a delegation of authority under this section and may with the consent of the director revoke or temporarily suspend the delegation agreement entered into with any entity which has failed to perform its delegated duties or has otherwise violated the terms of its agreement of delegation.

35-11-305. Repealed by Laws 1985, ch. 141, § 1.

35-11-306. Oil field waste disposal facilities; restriction.

(a) In addition to any other requirement or restriction imposed under the Wyoming Environmental Quality Act, no person shall locate, construct or operate any commercial oil field waste disposal facility within one (1) mile of any:

(i) Occupied dwelling house without the written consent of the owner of the dwelling; or

(ii) Public or private school without the consent of the school's board of trustees or board of directors.

(b) Any person who knowingly locates, constructs or operates a commercial oil field waste disposal facility in violation of subsection (a) of this section is subject to the penalties provided by W.S. 35-11-901. The provisions of subsection (a) of this section relating to commercial oil field waste disposal facilities shall be enforced by the water quality division of the Wyoming department of environmental quality.

(c) As a condition of receiving a permit pursuant to W.S. 35-11-301, any person locating, constructing or operating any commercial oil field waste disposal facility shall post a bond as required by this section.

(d) The council, by rules and regulations, shall establish bonding or financial assurance requirements for commercial oil field waste disposal facilities to assure there are adequate sources of funds to provide for:

(i) Cost effective closure, post-closure inspection and maintenance, and environmental monitoring and control, including but not limited to:

(A) Removal and disposal of buildings, fences, roads and other facility developments, and reclamation of affected lands;

(B) Construction of any waste cover or containment system required as a condition of any facility permit;

(C) Removal and off-site treatment or disposal of any wastes that are being stored or treated;

(D) Decontamination, dismantling and removal of any waste storage, treatment or disposal equipment or vessels;

(E) Operating any environmental monitoring systems or pollution control systems that are required as a condition of any facility permit or by order of the director; and

(F) Conducting periodic post-closure inspections of cover systems, surface water diversion structures, monitor wells or systems, pollutant detection and control systems, and performing maintenance activities to correct deficiencies that are discovered.

(ii) The estimated costs of remedying or abating, in a cost effective manner, the violation or damages caused by the violation in the event of any discharge of pollution to the air, land or to waters of the state which is in violation of a permit, standard, rule or requirement established under the provisions of this act.

(e) The bond established under subsection (d)(i) of this section shall be available during the operating life of the commercial oil field waste disposal facility to abate or remedy any violation of a permit, standard, rule or requirement established under the provisions of this act.

(f) The amount of any bond or financial assurance requirement shall be established by the director in accordance with procedures contained in rules and regulations of the council, but shall not be less than an amount sufficient to satisfy the purposes specified in subsection (d) of this section.

(g) The council shall provide rules for the establishment of a self-bonding program to be used if such a program will provide protection consistent with the objectives and purposes of article 3 of the act. In any such program, rules of the council shall provide for a timely reappraisal of pledged assets, require evidence of a suitable agent to receive service of process, assure that pledged assets are not already pledged for other projects, provide that pledged assets reside continuously in the state of Wyoming and provide for determination of the suitability of pledged assets.

(h) In lieu of a bond, the facility operator may deposit federally insured certificates of deposit payable to the Wyoming department of environmental quality, cash or government securities, or all three (3).

(j) Any bond may be cancelled by the surety only after ninety (90) days written notice to the director, and upon receipt of the director's written consent, which may be granted only when the requirements of the bond have been fulfilled.

(k) If the license to do business in Wyoming of any surety upon a bond filed pursuant to this act is suspended or revoked by any state authority then the facility operator, within thirty (30) days after receiving notice thereof, shall substitute a good and sufficient corporate surety licensed to do business in the state. Upon failure of the facility operator to make substitution of surety within a reasonable period of time, not to exceed sixty (60) days, the director shall suspend the facility permit to accept oil field wastes until proper substitution has been made.

(m) Bond forfeiture proceedings shall occur only after the department provides notice to the operator and surety pursuant to W.S. 35-11-701 that a violation exists and the council has approved the request of the director to begin forfeiture proceedings.

(n) With the approval of the council the director may:

(i) Expend forfeited funds to remedy and abate the circumstances with respect to which the bond was provided; and

(ii) Expend funds from the account under W.S. 35-11-424 to remedy and abate any immediate danger to human health, safety and welfare.

(o) If the forfeited bond or other financial assurance instrument is inadequate to cover the costs to carry out the activities specified in subsection (d) of this section, or in any case where the department has expended account monies under subsection (n) of this section, the attorney general shall bring suit to recover the cost of performing the activities where recovery is deemed possible.

(p) When the director determines that the violation has been remedied or the damage abated, the director shall release that portion of the bond or financial assurance instrument being held under paragraph (d)(ii) of this section. When the director determines that closure activities have been successfully completed at any commercial oil field waste disposal facility, the director shall release that portion of the bond or financial

assurance instrument being held to guarantee performance of activities specified in subparagraphs (d)(i)(A) through (E) of this section. The remaining portion of the bond or financial assurance instrument shall be held for a period of not less than five (5) years after the date of facility closure, or so long thereafter as necessary to assure proper performance of any post-closure activities specified in subparagraph (d)(i)(F) of this section. The retained portion of the bond or other financial assurance instrument may be returned to the facility operator at an earlier date if the director determines that the facility has been adequately stabilized and that environmental monitoring or control systems have demonstrated that the facility closure is protective of public health and the environment consistent with the purposes of this act.

35-11-307. Commercial waste treatment, storage and disposal facilities.

(a) In addition to any other requirement or restriction imposed under the Wyoming Environmental Quality Act, commercial waste treatment, storage and disposal facilities used for the management of more than ten (10) tons of dried wastewater treatment sludges or the equivalent thereto per operating day, are subject to the location restrictions and bond requirements provided for commercial oil field waste disposal facilities under W.S. 35-11-306.

(b) Any person who locates, constructs or operates a commercial waste treatment, storage and disposal facility in violation of the location restrictions provided by subsection (a) of this section and W.S. 35-11-306(a) is subject to the penalties provided by W.S. 35-11-901. This subsection shall be enforced by the water quality division of the department of environmental quality.

(c) The environmental quality council shall promulgate rules and regulations necessary to carry out this section including rules establishing bonding and financial assurance requirements in conformance with W.S. 35-11-306(d) through (p).

(d) This section shall not apply to publicly owned waste treatment, storage and disposal facilities.

35-11-308. Short title.

This act, W.S. 35-11-308 through 35-11-311, may be known and shall be cited as the "Wyoming Wetlands Act".

35-11-309. Legislative policy and intent.

(a) The legislature declares that all water, including collections of still water and waters associated with wetlands within the borders of this state are property of the state. The legislature further declares that water is one of Wyoming's most important natural resources, and the protection, development and management of Wyoming's water resources is essential for the long-term public health, safety, general welfare and economic security of Wyoming and its citizens.

(b) The legislature finds that agriculture, energy development, mining, highway construction and timbering are important industries in this state and that industrial concerns must be accommodated in the protection of wetlands. Wetlands can have an impact on industry practices. Even though property taxes are generally paid on such lands, wetlands provide limited economic return to the landowner. Wetland policies can obstruct water development projects and water management projects for private industry as well as public entities and can affect other developments.

(c) The legislature finds that wetlands are considered important for a variety of reasons. Wetlands provide the habitat base for the production and maintenance of waterfowl and are sometimes critical to the survival of endangered plants and animals. Wetlands also serve to moderate water flow and have value as natural flood control mechanisms, can aid in water purification by trapping, filtering and storing sediment and other pollutants and by recycling nutrients, and can serve as groundwater recharge and discharge areas. Wetlands also function as nursery areas for numerous aquatic animal species and are habitat for a wide variety of plant and animal species, and provide vital habitat for resident wildlife. Wetlands also can provide scientific, aesthetic and recreational benefits. The legislature therefore concludes that wetlands and values associated therewith deserve to be effectively managed, protected and preserved.

(d) The legislature recognizes that significant differences exist in Wyoming between naturally occurring wetlands and those wetlands that result from human activities. Because portions of Wyoming are arid or semiarid, water was diverted from streams and rivers for irrigating cropland, resulting in the creation of wetlands. These wetlands have partially compensated for wetlands losses. Additionally, road

and highway construction, petroleum industry operations and other human activities have created wetlands where none previously existed. While these man-made wetlands are equally as important as naturally occurring wetlands, having the same characteristics and providing the same values and functions, management flexibility is required to acknowledge their different origins and to protect the property rights of landowners and water right holders.

(e) In view of the legislative findings and conclusions of the importance of wetlands, water development and management, and industry in Wyoming it is hereby declared to be the wetlands policy of this state that water management and development and wetland preservation activities should be balanced to protect and accommodate private property, industry, water and wetland interests and objectives.

35-11-310. Notice to drain waters required; exception.

(a) Except as provided in subsection (b) of this section, after July 1, 1996, no person shall drain water from a naturally occurring or man-made wetland, or any series thereof, which has an area comprising five (5) acres or more, without first notifying the department that the water which will be drained from the wetland, or any series thereof, will not flood or adversely affect downstream lands. Notification shall include the size and location of the wetland, and whether the wetland is natural or man-made.

(b) Subsections (a) and (c) of this section do not apply to disturbances of wetlands resulting from mining operations conducted pursuant to mining permits issued by the department of environmental quality.

(c) Any person draining, or causing to be drained, water of a naturally occurring wetland, or any series thereof, which has an area comprising five (5) acres or more, without first notifying the department as required by subsection (a) of this section, shall not be eligible to participate in the mitigation credit banking system as provided by W.S. 35-11-311. Failure to notify the department pursuant to this section does not constitute a violation for purposes of W.S. 35-11-901.

35-11-311. Mitigation; guidelines.

(a) The department, after consultation with the Wyoming department of agriculture, state engineer, game and fish

department, Wyoming water development commission and the department of transportation, shall adopt guidelines for evaluating ecological function and values and for establishing and administering a mitigation credit banking system for compensatory mitigation. The guidelines shall, at a minimum, provide for:

(i) Criteria under which mitigation credits may be earned, with credit to be recognized for man-made wetlands created after July 1, 1991;

(ii) Geographical and other appropriate limitations for the application of mitigation bank credits;

(iii) Criteria for the use, banking or sale of banked credits;

(iv) The approval by the department for the earning, using, banking, transfer or selling of mitigation bank credits; and

(v) Requirements for the maintenance and submission by the department of records concerning ecological function and wetland value losses, and credit and debit accounts for each mitigation bank.

35-11-312. Fees.

(a) The department shall implement a surface water point source discharge permit fee system for each permit issued pursuant to W.S. 35-11-302(a)(v). The department shall assess an annual permit fee of one hundred dollars ($100.00) for each Wyoming pollution discharge elimination system permit and for each permit authorization held by any person under W.S. 35-11-301. All payment of permit fees shall be received prior to processing and issuance of the permit. Permit fees shall not be prorated and are nonrefundable upon permit modification, termination or expiration. The department shall prepare a biennium report on the fee system for review by the joint minerals, business and economic development interim committee by October 31 of the year prior to the Wyoming legislative budget session.

(b) The fees collected by the department pursuant to this section shall be deposited in a separate account, and shall be subject to appropriation by the legislature to the department to be used for costs associated with:

(i) Surface water quality monitoring and analysis;

(ii) Surface water quality modeling analysis and demonstrations;

(iii) Other nonoperating costs associated with surface water discharges.

(c) The revenue generated by this section shall not be used for operational costs associated with permit processing.

35-11-313. Carbon sequestration; permit requirements.

(a) The geologic sequestration of carbon dioxide is prohibited unless authorized by a permit issued by the department.

(b) The injection of carbon dioxide for purposes of a project for enhanced recovery of oil or other minerals approved by the Wyoming oil and gas conservation commission shall not be subject to the provisions of this chapter.

(c) If an oil and gas operator converts to geologic sequestration upon the cessation of oil and gas recovery operations, or injects carbon dioxide for the primary purpose of long term storage that results in an increased risk to an underground source of drinking water as compared to enhanced oil recovery operations, then regulation of the geologic sequestration facility and the geologic sequestration site shall be transferred to the department. If the oil and gas operator does not convert to geologic sequestration, the wells shall be plugged and abandoned according to the rules of the Wyoming oil and gas conservation commission. When determining whether an oil and gas recovery operation is injecting carbon dioxide for the primary purpose of long term storage that results in an increased risk to an underground source of drinking water as compared to enhanced oil recovery operations, the director shall consider the findings and recommendations of the supervisor of the Wyoming oil and gas conservation commission. The supervisor shall make his determination following a hearing of the oil and gas conservation commission examiners held under the commission's rules and regulations promulgated under Title 30, Chapter 5 of the Wyoming statutes. The supervisor shall provide the operator and director with notice of the supervisor's findings and recommendations under this subsection and an opportunity for a public hearing before the Wyoming oil and gas

conservation commission. Within fifteen (15) days of receiving notice as provided in this subsection, the operator may request a hearing before the Wyoming oil and gas conservation commission. If both a change in primary purpose to long term storage and an increased risk to an underground source of drinking water as compared to enhanced oil recovery operations are found to have occurred, the commission shall recommend transfer of regulation of the operation to the department.

(d) Temporary time limited permits for pilot scale testing of technologies for geologic sequestration shall be issued by the department based upon current rules and regulations.

(e) Permit requirements for geologic sequestration of carbon dioxide shall be as defined by department rules.

(f) The administrator of the water quality division of the department of environmental quality, after receiving public comment and after consultation with the state geologist, the Wyoming oil and gas conservation commission and the advisory board created under this act, shall recommend to the director rules, regulations and standards for:

(i) The creation of subclasses of wells within the existing Underground Injection Control (UIC) program administered by the United States Environmental Protection Agency under Part C of the Safe Drinking Water Act to protect human health, safety and the environment and allow for the permitting of the geologic sequestration of carbon dioxide;

(ii) Requirements for the content of applications for geologic sequestration permits. Such applications shall include:

(A) A description of the general geology of the area to be affected by the injection of carbon dioxide including geochemistry, structure and faulting, fracturing and seals, stratigraphy and lithology including petrophysical attributes;

(B) A characterization of the injection zone and aquifers above and below the injection zone which may be affected including applicable pressure and fluid chemistry data to describe the projected effects of injection activities;

(C) The identification of all other drill holes and operating wells that exist within and adjacent to the proposed sequestration site;

(D) An assessment of the impact to fluid resources, on subsurface structures and the surface of lands that may reasonably be expected to be impacted and the measures required to mitigate such impacts;

(E) Plans and procedures for environmental surveillance and excursion detection, prevention and control programs. For purposes of this section, "excursion" shall mean the detection of migrating carbon dioxide at or beyond the boundary of the geologic sequestration site;

(F) A site and facilities description, including a description of the proposed geologic sequestration facilities and documentation sufficient to demonstrate that the applicant has all legal rights, including but not limited to the right to surface use, necessary to sequester carbon dioxide and associated constituents into the proposed geologic sequestration site. The department may issue a draft permit contingent on obtaining a unitization order pursuant to W.S. 35-11-314 through 35-11-317;

(G) Proof that the proposed injection wells are designed at a minimum to the construction standards set forth by the department and the Wyoming oil and gas conservation commission;

(H) A plan for periodic mechanical integrity testing of all wells;

(J) A monitoring plan to assess the migration of the injected carbon dioxide and to insure the retention of the carbon dioxide in the geologic sequestration site;

(K) Proof of bonding or financial assurance to ensure that geologic sequestration sites and facilities will be constructed, operated and closed in accordance with the purposes and provisions of this act and the rules and regulations promulgated pursuant to this act;

(M) A detailed plan for post-closure monitoring, verification, maintenance and mitigation;

(N) Proof of notice to surface owners, mineral claimants, mineral owners, lessees and other owners of record of subsurface interests as to the contents of such notice. Notice requirements shall at a minimum require:

(I) The publishing of notice of the application in a newspaper of general circulation in each county of the proposed operation at weekly intervals for four (4) consecutive weeks;

(II) A copy of the notice shall also be mailed to all surface owners, mineral claimants, mineral owners, lessees and other owners of record of subsurface interests which are located within one (1) mile of the proposed boundary of the geologic sequestration site.

(O) A certificate issued by an insurance company authorized to do business in the United States certifying that the applicant has a public liability insurance policy in force for the geologic sequestration operations for which the permit is sought, or evidence that the applicant has satisfied other state or federal self insurance requirements. The policy shall provide for personal injury and property damage protection in an amount and for a duration as established by regulations.

(iii) Requirements for the operator to provide immediate verbal notice to the department of any excursion after the excursion is discovered, followed by written notice to all surface owners, mineral claimants, mineral owners, lessees and other owners of record of subsurface interests within thirty (30) days of when the excursion is discovered;

(iv) Procedures for the termination or modification of any applicable Underground Injection Control (UIC) permit issued under Part C of the Safe Drinking Water Act if an excursion cannot be controlled or mitigated;

(v) Such other conditions and requirements as necessary to carry out this section;

(vi) Requirements for bonding and financial assurance for geologic sequestration facilities and geologic sequestration sites including:

(A) Procedures to establish the type and amount of the bond or financial assurance instrument to assure that the operator faithfully performs all requirements of this chapter, complies with all rules and regulations and provides adequate financial resources to pay for mitigation or reclamation costs that the state may incur as a result of any default by the permit holder, provided that, any insurance instruments

submitted for financial assurance purposes shall include the state of Wyoming as an additional insured, which inclusion shall not be deemed a waiver of sovereign immunity;

(B) Annual or other periodic reporting by the permittee during geologic sequestration and reclamation activities to allow the administrator to confirm or adjust the amount or type of the bond or other financial assurance requirements consistent with the site, facility and operation specific risks and conditions;

(C) Procedures to require proof of compliance from any permittee ordered by the administrator to adjust a bond or other financial assurance, including procedures for permit suspension or termination procedures following notice and an opportunity for a hearing if adequate bonding or financial assurance cannot be demonstrated;

(D) Procedures for replacement of a bond or financial assurance instrument if notice of cancellation is provided or notice that the license to do business in Wyoming of the surety or insurance company issuing a bond or other financial assurance pursuant to this chapter is suspended or revoked;

(E) Procedures for the director to forfeit the bond or to make a claim against any insurance instrument providing financial assurance, including the right of the attorney general to bring suit to recover costs if the bond or financial assurance is inadequate, to pay for closure, mitigation, reclamation, measurement, monitoring, verification and pollution control, where recovery is deemed possible;

(F) Procedures, including public notice and a public hearing if requested, for the release of bonds or the termination of insurance instruments not less than ten (10) years after the date when all wells excluding monitoring wells have been appropriately plugged and abandoned, all subsurface operations and activities have ceased and all surface equipment and improvements have been removed or appropriately abandoned, or so long thereafter as necessary to obtain a completion and release certificate from the administrator certifying that plume stabilization as defined by rule has been achieved without the use of control equipment based on a minimum of three (3) consecutive years of monitoring data, and that the operator has completed site reclamation and all required monitoring and remediation sufficient to show that the carbon dioxide injected

into the geologic sequestration site will not harm or present a risk to human health, safety or the environment, including drinking water supplies, consistent with the purposes of this chapter and the rules and regulations adopted by the council;

(G) Requirements for the operator to record an affidavit in the office of the county clerk of the county or counties in which a geologic sequestration site is located, which affidavit shall be reasonably calculated to alert a person researching the title of a particular tract that such tract is underlain by a site permitted for geologic sequestration.

(vii) Requirements for fees to be paid by all permittees of geologic sequestration sites and facilities, which may include a per ton injection fee or a closure fee, during the period of injection of carbon dioxide and associated constituents into subsurface geologic formations in Wyoming, which fees shall be deposited in the geologic sequestration special revenue account created by W.S. 35-11-318 for use as provided therein.

(g) Repealed By Laws 2010, Ch. 52, § 3.

(h) At the time a permit application is filed, an applicant shall pay a fee to be determined by the director based upon the estimated costs of reviewing, evaluating, processing, serving notice of an application and holding any hearings. The fee shall be credited to a separate account and shall be used by the division as required to complete the tasks necessary to process, publish and reach a decision on the permit application. Unused fees shall be returned to the applicant.

(j) The director shall recommend to the council any changes that may be required to provide consistency and equivalency between the rules or regulations promulgated under this section and any promulgated for the regulation of carbon dioxide sequestration by the United States environmental protection agency.

(k) The Wyoming oil and gas conservation commission shall have jurisdiction over any subsequent extraction of sequestered carbon dioxide that is intended for commercial or industrial purposes.

(m) Nothing in this section shall be construed to create any liability by the state for failure to comply with this section.

35-11-314. Unitization of geologic sequestration sites; purposes; definitions.

(a) The purpose of W.S. 35-11-314 through 35-11-317 is declared by the Wyoming legislature to be the protection of corresponding rights, compliance with environmental requirements and to facilitate the use and production of Wyoming energy resources.

(b) Except when context otherwise requires or when otherwise defined in this subsection, the terms used or defined in W.S. 35-11-103, shall have the same meaning when used in W.S. 35-11-314 through 35-11-317. When used in W.S. 35-11-314 through 35-11-317:

(i) "Corresponding rights" means the right of all pore space owners in a unit area who will be affected by unit operations, either now or in the future, to concurrently share in the economic benefits generated by using the pore space in the unit area.

35-11-315. Unitization of geologic sequestration sites; agreements; application for permit; contents.

(a) Any interested person may file an application with the Wyoming oil and gas conservation commission requesting an order providing for the operation and organization of a unit of one (1) or more parts as a geologic sequestration site and for the pooling of interests in pore space in the proposed unit area for the purpose of conducting the unit operation. The application shall contain:

(i) A copy of any permit or draft permit issued by the department allowing geologic sequestration or any application for such permit;

(ii) A description of the pore space and surface lands proposed to be so operated, termed the "unit area";

(iii) The names, as disclosed by the conveyance records of the county or counties in which the proposed unit area is situated, and the status records of the district office of the bureau of land management of:

(A) All persons owning or having an interest in the surface estate and pore space in the unit area including mortgages and the owners of other liens or encumbrances; and

(B) All owners of the surface estate and pore space not included within but which immediately adjoins the proposed unit area or a corner thereof.

(iv) The addresses of all persons and owners identified in subparagraphs (iii)(A) and (B) of this subsection, if known. If the name or address of any person or owner is unknown, the application shall so indicate;

(v) A statement of the type of operations contemplated in order to effectuate the purposes specified in W.S. 35-11-314 to comply with environmental requirements and to facilitate the use and production of Wyoming energy resources;

(vi) A proposed plan of unitization applicable to the proposed unit area which the applicant considers fair, reasonable and equitable and which shall include provisions for determining the pore space to be used within the area, the appointment of a unit operator and the time when the plan is to become effective;

(vii) A proposed plan for determining the quantity of pore space storage capacity to be assigned to each separately owned tract within the unit and the formula or method by which pore space will be allocated the economic benefits generated by use of pore space in the unit area;

(viii) A proposed plan for generating economic benefits for the use of pore space within the unit area;

(ix) A proposed operating plan providing the manner in which the unit area will be supervised and managed and, if applicable, costs allocated and paid, unless all owners within the proposed unit area have joined in executing an operating agreement or plan providing for such supervision, management and allocation and, if applicable, payment of costs. All operating plans shall comply with all applicable environmental requirements.

35-11-316. Unitization of geologic sequestration sites; hearings on application, order; modifications.

(a) Upon receipt of an application under W.S. 35-11-315, the Wyoming oil and gas conservation commission shall promptly set the matter for hearing, and in addition to any notice otherwise required by law or the commission's rules, shall cause the applicant to give notice of the hearing, specifying the time and place of hearing, and describing briefly its purpose and the land and pore space affected, to be mailed by certified mail at least thirty (30) days prior to the hearing to all persons whose names and addresses are required to be listed in the application.

(b) After considering the application and hearing the evidence offered in connection therewith, the Wyoming oil and gas conservation commission shall enter an order setting forth the following findings and approving the proposed plan of unitization and proposed operating plan, if any, if the commission finds that:

(i) The material allegations of the application are substantially true;

(ii) The purposes specified in W.S. 35-11-314 will be served by granting the application;

(iii) The application outlines operations that will comply with environmental requirements;

(iv) Granting the application will facilitate the use and production of Wyoming energy resources;

(v) The quantity of pore space storage capacity, and method used to determine the quantity of pore space storage capacity allocated to each separately owned tract within the unit area represents, so far as can be practically determined, each tract's actual share of the pore space to be used in the sequestration activity;

(vi) The method by which the allocation of economic benefits generated from use of pore space within the unit area between pore space owners; and between pore space owners and the unit operator or others is fair and reasonable, taking into consideration the costs required to capture, transport and sequester the carbon dioxide;

(vii) The method of generating economic benefits from the use of pore space in the unit area is fair and equitable and is reasonably designed to maximize the value of such use;

(viii) Other requirements specified by rules or regulations adopted by the oil and gas conservation commission have been met.

(c) No order of the Wyoming oil and gas conservation commission authorizing the commencement of unit operations shall become effective until the plan of unitization has been signed or in writing ratified or approved by those persons who own at least eighty percent (80%) of the pore space storage capacity within the unit area. If such consent has not been obtained at the time the commissioner's order is made, the commission shall, upon application, hold supplemental hearings and make findings as may be required to determine when and if the consent will be obtained. The commission shall require the applicant to give notice of a supplemental hearing by regular mail at least thirty (30) days prior to the hearing to each person owning interests in the pore space in the proposed unit area whose name and address was required by W.S. 35-11-315(a) to be listed in the application for the unit operations. If the required percentages of consent have not been obtained within a period of six (6) months from and after the date on which the order of approval is made, the order shall be ineffective and revoked by the commission, unless, for good cause shown, the commission extends that time. Any interested person may file an application with the Wyoming oil and gas conservation commission requesting an order applicable only to the proposed unit area described in the application which shall provide for the percentage of approval or ratification to be reduced from eighty percent (80%) to seventy-five percent (75%). The application shall contain the information required by W.S. 35-11-315(a) and any order of the commission entered pursuant to the application shall comply with subsection (b) of this section. Notice of the hearing on the application shall be given in the same manner and to the same persons as required by subsection (a) of this section. If the commission finds that negotiations were being conducted since July 1, 2009, or have been conducted for a period of at least nine (9) months prior to the filing of the application, that the applicant has participated in the negotiations diligently and in good faith, and that the percentage of approval or ratification required by this subsection cannot be obtained, the commission may reduce any percentage of approval or ratification required by this section from eighty percent (80%) to seventy-five percent (75%). The order shall affect only the unit area described in the application and shall operate only to approve the proposed plan of unitization and proposed operating plan and to reduce the required percentage of approval or ratification

thereof and shall not change any other requirement contained in this section.

(d) From and after the effective date of an order of the Wyoming oil and gas conservation commission entered under the provisions of this section, the operation of the unit area defined in the order by persons other than the unit operator or persons acting under the unit operator's authority, or except in the manner and to the extent provided in the plan of unitization approved by the order, shall be unlawful and is hereby prohibited.

(e) Unless otherwise provided in this section, an order entered by the Wyoming oil and gas conservation commission under this section may be amended in the same manner and subject to the same conditions as an original order or previous agreement: provided, no amendatory order shall change the assignments of pore space storage capacity between existing pore space owners in the unit area as established by the original order or previous agreement, except with the written consent of those persons who own at least eighty percent (80%) of the pore space storage capacity in the unit area, nor change any allocation of costs as established by the original order or previous agreement, except with the written consent of those persons who own at least eighty percent (80%) of the unit pore space storage capacity. If consent has not been obtained at the time the commission order is made, the commission shall, upon application, hold supplemental hearings and make findings as may be required to determine when and if such consent will be obtained. The commission shall require the applicant to give notice of a supplemental hearing by regular mail at least thirty (30) days prior to the hearing to each person owning interests in the unit area whose name and address was required by the provisions of W.S. 35-11-315(a)(iii) to be listed in the application for the unit operations. If the required percentages of consent have not been obtained within a period of six (6) months from and after the date on which the order of approval is made, the order shall be ineffective and revoked by the commission, unless, for good cause shown, the commission extends that time. Any interested person may file an application with the Wyoming oil and gas conservation commission requesting an order applicable only to the unit area described in the application which shall provide for the percentage of approval or ratification to be reduced from eighty percent (80%) to seventy-five percent (75%). The application shall contain the information required by W.S. 35-11-315(a) and any order of the commission entered pursuant to the application shall comply with

subsection (b) of this section. Notice of the hearing on the application shall be given in the same manner and to the same persons as required by subsection (a) of this section. If the commission finds that negotiations were being conducted since July 1, 2009 or have been conducted for a period of at least nine (9) months prior to the filing of the application, that the applicant has participated in the negotiations diligently and in good faith, and that the percentage of approval or ratification required by this subsection cannot be obtained, the commission may reduce any percentage of approval or ratification required by this section from eighty percent (80%) to seventy-five percent (75%). The order shall affect only the unit area described in the application and operate only to reduce the required percentage of approval or ratification necessary for amending the assignment of pore space and shall not change any other requirement contained in this section.

(f) The Wyoming oil and gas conservation commission, upon its own motion or upon application, and with notice and hearing, may modify its order regarding the operation, size or other characteristic of the unit area in order to prevent or assist in preventing a substantial inequity resulting from operation of the unit, provided that no such modification may amend any permit issued under W.S. 35-11-313.

(g) Any owner of pore space within a geologic sequestration site who has not been included within a unitization application or order authorizing a unit under this section, may petition for inclusion in the unit area. The petition shall be filed with the Wyoming oil and gas conservation commission and shall describe the petitioner's legal entitlement to the pore space, the location of the pore space, whether the pore space is included within any permitting area applicable to the unit area and the bases for inclusion in the unit area. The petition shall be accompanied by a deposit of money sufficient to pay all costs of the inclusion proceedings. The commission shall require the petitioner to publish a notice of filing of the petition which notice shall state the filing of the petition, the name of the petitioner, the location of the pore space and the prayer of the petitioner. The notice shall notify all interested persons to appear at a specified time and place and to show cause, in writing, if any they have, why the petition should not be granted. The commission at the time and place mentioned in the notice shall proceed to hear the petition and all objections thereto and shall thereafter grant or deny the petition. The filing of the petition shall be deemed and taken as an assent by each and all

petitioners to the inclusion in the unit of the pore space mentioned in the petition or any part thereof. If the petition is granted, the petitioner shall be considered to have been a member of the unit since its inception and, upon the payment of any costs paid by unit members, shall be entitled to all economic benefits received by unit members since the inception of the unit provided that no unit modification affects any permit issued under W.S. 35-11-313. The oil and gas conservation commission shall adopt rules providing for the fair and equitable determination of pore space storage capacity for each successful petitioner and the means by which successful petitioners shall be paid the economic benefits to which they are entitled under this subsection, including, if necessary, a reallocation of economic benefits among unit members.

(h) A certified copy of any order of the Wyoming oil and gas conservation commission entered under the provisions of this section shall be entitled to be recorded in the land records of the county clerk for the counties where all or any portion of the unit area is located, and the recordation shall constitute notice thereof to all persons.

(j) No provision of W.S. 35-11-314 through 35-11-317 shall be construed to confer on any person the right of eminent domain and no order for unitization issued under this section shall act so as to grant to any person the right of eminent domain.

(k) No order for unitization issued under this section shall act so as to grant any person a right of use or access to a surface estate if that person would not otherwise have such a right.

35-11-317. Unitization of geologic sequestration sites; economic benefits; liens.

(a) No order of the Wyoming oil and gas conservation commission or other contract relating to a separately owned tract within the unit area shall be terminated by the order providing for unit operations, but shall remain in force and apply to that tract, its benefits, burdens and obligations, until terminated in accordance with the provisions thereof.

(b) Except to the extent that the parties affected agree, no order providing for unit operations shall be construed to result in a transfer of all or any part of the title to pore space or other rights in any tract in the unit area and no agreement or order shall operate to violate the terms and

requirements of any permit applicable to pore space within the unit area.

35-11-318. Geologic sequestration special revenue account.

(a) There is created the Wyoming geologic sequestration special revenue account. The account shall be administered by the director and all funds in the account shall be transmitted to the state treasurer for credit to the account and shall be invested by the state treasurer as authorized under W.S. 9-4-715(a), (d) and (e) in a manner to obtain the highest return possible consistent with the preservation of the corpus. Any interest earned on the investment or deposit of monies into the fund shall remain in the fund and shall not be credited to the general fund. All funds in the account are continuously appropriated for use by the director consistent with this section.

(b) The account shall consist of all monies collected by the department to measure, monitor and verify Wyoming geologic sequestration sites following site closure certification, release of all financial assurance instruments and termination of the permit. The department shall promulgate rules necessary to collect monies in an amount reasonably calculated to pay the costs of measuring, monitoring and verifying the sites.

(c) Funds in the account shall be used only for the measurement, monitoring and verification of geologic sequestration sites following site closure certification, release of all financial assurance instruments and termination of the permit.

(d) The existence, management and expenditure of funds from this account shall not constitute a waiver by the state of Wyoming of its immunity from suit, nor does it constitute an assumption of any liability by the state for geologic sequestration sites or the carbon dioxide and associated constituents injected into those sites.

ARTICLE 4
LAND QUALITY

35-11-401. Compliance generally; exceptions.

(a) No mining operation or operation by which solid minerals are intended to be extracted from the earth shall be commenced after the effective date of the act, except in

accordance with its requirements. It is recognized these measures are performed in the public interest and constitute an expense to the operator, and while this act applies to all mining operations, no operator shall be compelled to perform at his own expense measures required under this act with respect to operations that were completed or substantially completed prior to the effective date of this act. Nothing in this act shall provide the land quality division regulatory authority over oil mining operations as defined in W.S. 30-5-104(d)(ii)(F).

(b) All surface or underground mining operations operating at the date of enactment of this statute shall have a period of one (1) year within which to fulfill the requirements of this act. This period may be extended at the discretion of the council if the administrator has been unable to review and evaluate all operations that are presently operating under a permit issued by the state land commissioner in compliance with the "Open Cut Land Reclamation Act of 1969".

(c) An operator presently operating under a permit issued by the state land commissioner in accordance and in full compliance with the Open Cut Land Reclamation Act of 1969 will be issued a permit upon submission to the administrator of:

(i) The information, maps and other exhibits required by this act; and

(ii) A reclamation plan which fulfills all of the requirements of this act and is reviewed by the advisory board.

(d) Within two (2) months following the final approval of a state program pursuant to Section 503 of P.L. § 95-87, all operators of surface coal mining operations operating under a permit issued in accordance with the terms of this act shall apply for a new mining permit covering those lands expected to be mined or reclaimed after eight (8) months from state program approval. Within eight (8) months from the date of state program approval, the administrator shall approve or deny an application for a surface coal mining permit. No person shall engage in or carry out surface coal mining operations unless the person has first obtained a permit pursuant to this section except as hereafter provided. A person conducting operations consistent with this act may continue operating beyond eight (8) months from state program approval if an application for a permit has been filed in accordance with this act but the administrator's decision on the application has not been rendered.

(e) The provisions of this article shall not apply to any of the following activities:

(i) Building or expansion of utilities, soil conservation conveyances and foundation excavations for the purpose of constructing buildings and other structures not used in mining operations;

(ii) Excavations other than for the extraction of coal by an agency of federal, state or local government or its authorized contractors for highway and railroad cuts and for the purpose of providing fill, sand, gravel and other materials for use in connection with any public project if reclamation requirements of federal, state or local governments are consistent with all provisions of this act or regulations promulgated thereunder. Excavations for the extraction of coal as an incidental part of federal, state or local government financed highway or other construction shall be conducted in accordance with regulations established by the council;

(iii) The extraction of sand, gravel, dirt, scoria, limestone, dolomite, shale, ballast or feldspar by a landowner for his own noncommercial use from land owned or leased by him;

(iv) Archaeological excavations;

(v) Other surface mining operations which the administrator determines to be of an infrequent nature and which involve only minor surface disturbances;

(vi) Limited mining operations, whether commercial or noncommercial, for the removal of sand, gravel, scoria, limestone, dolomite, shale, ballast or feldspar from an area of fifteen (15) acres or less of affected land, excluding roads used to access the mining operation, if the operator has written permission for the operation from the owner and lessee, if any, of the surface. The operator shall notify the land quality division of the department of environmental quality and the inspector of mines within the department of workforce services of the location of the land to be mined and the postal address of the operator at least thirty (30) days before commencing operations. A copy of the notice shall also be mailed to all surface owners located within one (1) mile of the proposed boundary of the limited mining operation at least thirty (30) days before commencing operations. Limited mining operations authorized under this paragraph are subject to the following:

(A) That the affected lands shall not be within three hundred (300) feet of any existing occupied dwelling, home, public building, school, church, community or institutional building, park or cemetery unless the landowner's consent has been obtained;

(B) Before commencing any limited mining operations, the operator shall file a bond to insure reclamation in accordance with the purposes of this act in the amount of two thousand dollars ($2,000.00) per acre, except for quarries for which the bond amount shall not exceed three thousand dollars ($3,000.00) per acre of affected land including roads used to access the mining operation. Within ninety (90) days after limited mining operations commence, the administrator may require the operator to post an additional bond per acre of affected land if he determines that such amount is necessary to insure reclamation. The operator shall post the additional bond not later than thirty (30) days after receipt of such notification;

(C) After the limited mining operations have ceased or within thirty (30) days after abandonment of the limited mining operation, the operator shall notify the administrator of such fact and commence reclamation and restoration in compliance with the rules and regulations of the land quality division of the department of environmental quality. The rules and regulations for reclamation shall at all times be reasonable; and

(D) Immediate reclamation will not be required if the landowner advises the department in writing of his intent to further utilize the product of the mine, and if he assumes the obligation of reclamation.

(vii) Repealed By Laws 2013, Ch. 44, § 2.

(viii) Repealed By Laws 2013, Ch. 44, § 2.

(ix) Repealed By Laws 2013, Ch. 44, § 2.

(f) In promulgating regulations to implement this section the administrator and director shall consider:

(i) The nature of the class, type, or types of activities involved;

(ii) Their magnitude (in tons and acres);

(iii) Their potential for adverse environmental impact; and

(iv) Whether the class, type, or types of activities are already subject to an existing regulatory system by state or local government or an agency of the federal government.

(g) A single permit may be issued to all county or other local governmental entities of the state to operate noncontiguous facilities in compliance with the statutes.

(h) A single permit may be issued for mining of noncontiguous minerals deposits at the discretion of the administrator in compliance with the statutes.

(j) The council, upon recommendation from the advisory board through the administrator and director, may modify or suspend certain requirements of W.S. 35-11-406(a), (b), (d), (f) and (g) by rules and regulations, for surface mining operations involving not more than thirty-five thousand (35,000) yards of overburden, excluding topsoil, and ten (10) acres of affected land in any one (1) year, if the application requirements insure reclamation in accordance with the purposes of this act. Roads used to access a mining operation permitted under this section shall be excluded from the annual ten (10) acres of affected land limit, but shall be included in the permit and bonded for reclamation liability.

(k) An operator conducting operations pursuant to W.S. 35-11-401(e)(vi) shall file an annual report with the administrator on or within thirty (30) days prior to the anniversary date of the commencement date of initial operation. The report shall contain:

(i) The name and address of the operator;

(ii) The location of the mining operations;

(iii) The number of acres of affected lands at the conclusion of the past year's operation;

(iv) The number of acres of land that have been reclaimed during the past year;

(v) The number of yards of overburden or mined mineral removed;

(vi) The expected remaining life of the mining operation.

(m) No steep slope surface coal mining operation shall be commenced until the council has promulgated rules and regulations establishing steep slope mining performance standards.

(n) In promulgating regulations to implement W.S. 35-11-401 and 35-11-402, the administrator and director shall consider interim mine stabilization.

35-11-402. Establishment of standards.

(a) The council shall, upon recommendation by the advisory board through the administrator and the director, establish rules and regulations pursuant to the following reclamation standards for the affected areas, including but not limited to:

(i) The highest previous use of the affected lands, the surrounding terrain and natural vegetation, surface and subsurface flowing or stationary water bodies, wildlife and aquatic habitat and resources, and acceptable uses after reclamation including the utility and capacity of the reclaimed lands to support such uses;

(ii) Backfilling, regrading or recontouring to assure the reclamation of the land to a use at least equal to its highest previous use;

(iii) A time schedule encouraging the earliest possible reclamation program consistent with the orderly and economic development of the mining property;

(iv) Revegetation of affected lands including species to be used, methods of planting and other details necessary to assure the development of a vegetative cover consistent with the surrounding terrain and the highest prior use standards set out in paragraph (i) of this subsection;

(v) Stockpiling, preservation and reuse of topsoil for revegetation, unless it can be demonstrated to the satisfaction of the administrator that other methods of reclamation or types of soil are superior;

(vi) Prevention of pollution of waters of the state from mining operations, substantial erosion, sedimentation, landslides, accumulation and discharge of acid water, and flooding, both during and after mining and reclamation;

(vii) In administering established rules and regulations on such standards the administrator shall consider all the facts and circumstances bearing upon any reclamation plan. In consideration of reclamation plans for any mining operation that is presently being conducted in the state under a permit issued by the state land commission under the "Open Cut Land Reclamation Act of 1969", particular attention shall be paid to:

(A) The social and economic value of the product mined;

(B) The technological availability for economic feasibility of reclaiming the affected area.

(viii) Establishing methods of estimating cost of reclamation which shall be computed according to established engineering methods;

(ix) Establishing procedures to obtain special license to explore by dozing. Such procedures will include but not be limited to method of application, location of proposed exploration, present use of affected lands, name of surface owner, proposed reclamation program, bonding requirement, and such other procedures as are necessary to insure that the exploration work will be conducted within the intent of this act;

(x) Rules and regulations for the criteria for review and information and public notice requirements for permit revisions. A permit may be revised without public notice or hearing for revisions, including incidental boundary revisions to the area covered by the permit, if these do not propose significant alterations in the reclamation plan. Subject to applicable standards, any permit, except for surface coal mining permits, may be revised, in the permitted area, by identifying proposed alterations to the mining or reclamation plan in the annual report or addendum thereto, or by obtaining prior approval from the director, at the operator's discretion;

(xi) Rules and regulations for conducting coal exploration operations which shall include prior notice of

intention to explore, written approval by the director for the removal of more than two hundred fifty (250) tons of coal and reclamation provisions for new and existing operations in accordance with the reclamation standards governing surface mining;

(xii) Rules and regulations governing new and existing special bituminous surface coal mines as recognized in P.L. 95-87, which shall be controlling notwithstanding other provisions of this act to the contrary. The regulations shall pertain only to standards governing on site handling of spoils, elimination of depressions capable of collecting water, creation of impoundments and regrading to the approximate original contour, and shall specify that all remaining highwalls be stable. All other performance standards contained in this act shall apply to such mines;

(xiii) Establishing such other rules and regulations necessary to insure full compliance with all requirements relating to reclamation, and the attainment of those objectives directed to public health, safety, and welfare.

(b) To the extent federal law or regulations require approval by state wildlife agencies regarding surface mining lands to be reclaimed for fish and wildlife habitat, the Wyoming game and fish department shall consider fish and wildlife habitat to mean as defined in W.S. 35-11-103(e)(xxvi) and does not include grazingland as defined in W.S. 35-11-103(e)(xxvii), unless the grazingland has been designated as:

(i) Critical habitat by the United States fish and wildlife service; or

(ii) Crucial habitat by the Wyoming game and fish department prior to submittal of the initial permit application or any subsequent amendments to the permit application.

(c) For the reclamation of grazingland, native shrubs shall be used for reestablishment. No shrub species shall be required to be more than one-half (1/2) of the shrubs in the post-mining standard.

35-11-403. Powers of the administrator of land quality division.

(a) The administrator of the land quality division shall have the following powers:

(i) To utilize qualified experts in the field of hydrology, soil science, plant or wildlife ecology, and other related fields to advise on mining reclamation practices, and the adoption of rules. Advisors shall be reimbursed for travel and other expenses incurred in performance of official duties in the same manner and amount as state employees;

(ii) To fix the amount of, collect, maintain and otherwise comply with the statutory performance bond requirement set out in W.S. 35-11-417. The council may order the forfeiture of a bond as set out in W.S. 35-11-421;

(iii) To reclaim any affected land with respect to which a bond has been forfeited;

(iv) To recommend to the director, the issuance, denial, amendment, revocation and suspension of permits, licenses and special exploration licenses in accordance with the provisions of this act.

35-11-404. Drill holes to be capped, sealed or plugged.

(a) All drill holes sunk in the exploration for locatable or leasable minerals on all lands within the state of Wyoming shall be capped, sealed or plugged in the manner described hereinafter by or on behalf of the discoverer, locator or owner who drilled the hole. Prospecting and exploration drill holes shall include all drill holes except those drilled in conjunction with the expansion of an existing mine operation or wells or holes regulated pursuant to W.S. 30-5-101 through 30-5-204.

(b) "Person" means any person, firm, association or corporation who drills or is responsible for drilling holes for the purpose of exploration or development of these minerals.

(c) "Plugging, sealing and capping upon abandonment" means any hole drilled shall be abandoned in the following manner:

(i) "Plugging". All artesian flow of ground water to surface shall be eliminated by a cement plug or other similar material sufficient to prevent such artesian flow;

(ii) "Sealing". Drill holes which have encountered any ground water shall be sealed by leaving a column of drilling

mud in the hole or by such other sealing procedure which is adequate to prevent fluid communication between aquifers;

(iii) "Surface Cap". Each drill hole is to be completely filled to the collar of the hole or securely capped at a minimum depth of two (2) feet below either the original land surface or the collar of the hole, whichever is at the lower elevation. If capped, the cap is to be made of concrete or other material satisfactory for such capping. The hole shall be backfilled above the cap to the original land surface;

(iv) "Water Well". If any holes drilled are to be ultimately used as or converted to water wells, the user shall comply with the applicable provisions of W.S. 41-3-911 through 41-3-938;

(v) "Surface Restoration". Each drill site shall be restored as nearly as possible to its original condition, including reseeding if grass or other crop was destroyed.

(d) Within sixty (60) days after the completion and abandonment of any hole drilled which has artesian flow at the surface, the person for whom the hole was drilled shall report the existence of the hole to the administrator, land quality division and the state engineer. The report, set forth in affidavit form, shall contain at least the location of the hole to the nearest two hundred (200) feet, the depth of the hole and estimated rate of flow, if known, and the facts of the plugging technique used.

(e) Within twelve (12) months after the completion and proper abandonment of any hole drilled any person shall file with the administrator, land quality division and the state engineer a report which shall include the location of each hole, utilizing Wyoming state plane coordinates, and the depth of each hole drilled. The reports shall be confidential for a period of five (5) years from the date of filing. The period may be extended for additional five (5) year periods upon request of the person filing the report. When a report is no longer confidential pursuant to this subsection, the provisions of W.S. 35-11-1101 shall apply.

(f) Where plugging reports are required to conform with federal regulations, and if such reports cover all the requirements of this section, they are adequate for the purposes described herein.

(g) Except for drilling in conjunction with coal mining or coal exploration operations, the director in consultation with the administrator, land quality division, may waive any of the administrative provisions of this act pertaining to aquifers following a formal written application for a waiver of any particular provisions, if in the opinion of the director waiver of any such provisions shall not adversely affect the interests of the state of Wyoming and would create an undue hardship upon application. Waivers shall be in writing and may be appealed under the provisions of the Wyoming Administrative Procedure Act.

(h) The drill hole should be capped immediately following the drilling and probing. If it is necessary to temporarily delay the capping or keep the hole open for any reason, the drill hole must be securely covered in a manner which will prevent injury to persons or animals.

(j) Before drilling on lands within the state of Wyoming, any person conducting coal exploration operations shall give notice to the administrator which shall, at a minimum include a legal description of the area, the approximate number of holes to be drilled and a reclamation plan for proper abandonment in accordance with regulations promulgated by the council. This excludes drilling within an existing permit area approved prior to August 3, 1977.

(k) Except as follows, any person who fails or refuses to comply with the provisions of this section is guilty of a misdemeanor and on conviction is subject to imprisonment in a county jail for not more than ninety (90) days or a fine of not more than five thousand dollars ($5,000.00), or both. Any person who drills in conjunction with coal mining or coal exploration operations in violation of this section or regulations promulgated pursuant hereto is subject to the provisions of W.S. 35-11-901.

(m) When exploratory drill holes have been abandoned in violation of these provisions, the director in consultation with the administrator, land quality division may then cause such holes to be capped, sealed or plugged and the state of Wyoming is granted a cause of action against the person refusing to comply with the provisions of this section for the recovery of the reasonable costs incurred by the director in having the holes properly capped, sealed or plugged.

(n) All actions pursuant to subsection (k) or (m) of this section, must be initiated by the state of Wyoming within three (3) years of the date of the report required by subsection (d) of this section.

35-11-405. Permit defined; no mining operation without valid permit; when validity terminated.

(a) A mining permit is the certification that the tract of land described may be mined by an operator licensed to do so in conformance with an approved mining plan and reclamation plan. No mining operation may be commenced or conducted on land for which there is not in effect a valid mining permit to which the operator possesses the rights.

(b) A mining permit once granted remains valid and in force from the date of its issuance until the termination of all mining and reclamation operations, except as otherwise provided in this act.

(c) All surface coal mining permits issued subsequent to approval of the state program pursuant to P.L. 95-87 shall be issued for a term of not to exceed five (5) years. If the applicant demonstrates that a specified longer term is reasonably needed to allow the applicant to obtain necessary financing for equipment and the opening of the operation and if the application is complete for this specified longer term, the director shall grant a permit for a longer term.

(d) A surface coal mining permit shall terminate if the permittee has not commenced the surface coal mining operations covered by the permit within three (3) years of the issuance of the permit, except as provided in P.L. 95-87.

(e) Any valid surface coal mining permit issued pursuant to this act is entitled to a right of successive renewal upon expiration with respect to areas within the boundaries of the existing permit if public notice has been given, any additional revised or updated information has been provided and the operation is in compliance with applicable laws and regulations and if the renewal requested will not substantially jeopardize the operator's responsibility on existing affected land.

(f) If an application for renewal of a valid surface coal mining permit includes a proposal to extend the mining operation beyond the boundaries authorized in the existing permit, the portion of the application for renewal which addresses any new

land areas shall be subject to the standards applicable to new applications under this act. However, areas previously identified in the mining plan and reclamation plan of those surface coal mining operations not subject to the standards in W.S. 35-11-406(m)(xiii) will not be subject to those standards in the renewal application.

(g) An application for renewal of a valid surface coal mining permit shall be made at least one hundred twenty (120) days prior to expiration of a valid coal permit.

35-11-406. Application for permit; generally; denial; limitations.

(a) Applications for a mining permit shall be made in writing to the administrator and shall contain:

(i) The name and address of the applicant, and, if the applicant is a partnership, association, or corporation, the names and addresses of all managers, partners and executives directly responsible for operations in this state;

(ii) A sworn statement stating that the applicant has the right and power by legal estate owned to mine from the land for which the permit is desired;

(iii) A sworn statement that the applicant has not forfeited a bond posted for reclamation purposes and that all the statements contained in the permit application are true and correct to the best knowledge of the applicant;

(iv) The names and last known addresses of the owners of record of the surface and mineral rights on the land to be covered by the proposed permit;

(v) The names and last known addresses of the owners of record of the surface rights of the lands immediately adjacent to the proposed permit area and for surface coal mining operations, the names and last known addresses of coal ownership immediately adjacent to the permit area;

(vi) An identification of the land to be included in the permit area to include:

(A) The location of the lands by legal subdivision, section, township, range, county, and municipal corporation, if any;

(B) The name, if any, by which such lands or any part thereof are known;

(C) The approximate number of acres to be affected, including the total number of acres in the area covered by the permit application;

(D) The nearest town, village, or city.

(vii) A general description of the land which shall include as nearly as possible its vegetative cover, the annual rainfall, the general directions and average velocities of the winds, indigenous wildlife, its past and present uses, its present surface waters, and adjudicated water rights and their immediate drainage areas and uses, and, if known, the nature and depth of the overburden, topsoil, subsoil, mineral seams or other deposits and any subsurface waters known to exist above the deepest projected depth of the mining operation;

(viii) A United States Geological Survey topographic map, if available, of the permit area;

(ix) A map based upon public records showing the boundaries of the land to be affected, its surrounding immediate drainage area, the location and names, where known, of all roads, railroads, public or private rights-of-way and easements, utility lines, lakes, streams, creeks, springs, and other surface water courses, oil wells, gas wells, water wells, and the probable limits of underground mines and surface mines, whether active or inactive, on or immediately adjacent to the land to be affected. The map shall also show:

(A) The names, last known addresses and boundary lines of the present surface landowners and occupants on the adjacent land to be affected;

(B) The location, ownership, and uses of all buildings on, or on lands adjacent to, the land to be affected;

(C) An outline of all areas previously disturbed by underground mining or that will be affected by future underground mining as a guide to potential subsidence problems;

(D) Any political boundaries of special districts on or near the land to be affected.

(x) The mineral or minerals to be mined;

(xi) The estimated dates of commencement and termination of the proposed permit;

(xii) A minimum fee of one hundred dollars ($100.00) plus ten dollars ($10.00) for each acre in the requested permit, but the maximum fee for any single permit shall not exceed two thousand dollars ($2,000.00). The permit is amendable, excepting permits for surface coal mining operations, without public notice or hearing if the area sought to be included by amendment does not exceed twenty percent (20%) of the total permit acreage, is contiguous to the permit area, and if the operator includes all of the information necessary in his application to amend that is required in this section including a mining and reclamation plan acceptable to the administrator. The fee for a permit amendment shall be two hundred dollars ($200.00) plus ten dollars ($10.00) for each acre not to exceed two thousand dollars ($2,000.00);

(xiii) A certificate issued by an insurance company authorized to do business in the United States certifying that the applicant has a public liability insurance policy in force for the surface mining and reclamation operations for which this permit is sought, or evidence that the applicant has satisfied other state or federal self-insurance requirements. This policy shall provide for personal injury and property damage protection in an amount adequate to compensate any persons damaged as a result of surface coal mining and reclamation operations including use of explosives and entitled to compensation under the applicable provisions of state law. This policy shall be maintained in full force and effect during the terms of the permit or any renewal, including the length of all reclamation operations;

(xiv) For surface coal mining permit applications, a schedule listing all notices of violation which resulted in enforcement action of this act, and any law, rule or regulation of the United States, or of any department or agency in the United States pertaining to air or water environmental protection incurred by the applicant in connection with any surface coal mining operation during the three (3) year period prior to the date of application;

(xv) Such other information as the administrator deems necessary or as good faith compliance with the provisions of this act require.

(b) The application shall include a mining plan and reclamation plan dealing with the extent to which the mining operation will disturb or change the lands to be affected, the proposed future use or uses and the plan whereby the operator will reclaim the affected lands to the proposed future use or uses. The mining plan and reclamation plan shall be consistent with the objectives and purposes of this act and of the rules and regulations promulgated. The mining plan and reclamation plan shall include the following:

(i) A statement of the present and proposed use of the land after reclamation;

(ii) Plans for surface gradient to a contour suitable for proposed use after reclamation is completed and proposed method of accomplishment;

(iii) Type of vegetation and manner of proposed revegetation or other surface treatment of affected area;

(iv) Method of disposal of buildings and structures erected during the operation;

(v) One (1) or more maps as may be required by the administrator of reclamation and mining operators on an appropriate scale showing location and extent of the proposed affected lands, together with the location of any public highways, dwelling, surface drainage area, and all utility and other easements existing on the affected lands. The map shall also show the location of all proposed pits, spoil banks, haul roads, railroads, topsoil conservation areas, buildings, refuse or waste areas, shipping areas including conveyors, and shall further set forth the drainage plan on, below, above and away from the affected land including subsurface water above the mineral seam to be removed; and shall further show the location of all waste water impoundments, any settling ponds, and other water treatment facilities, constructed drainways and natural drainways, and the surface bodies of water receiving this discharge. In lieu of an original map, a reproduction of a United States Geological Survey topographic map or aerial photograph is acceptable if the required information is platted. The map of the affected lands shall be accompanied by a typical cross section, showing the elevations of the surface, top and bottom of the mineral seam. Additional cross sections at appropriate intervals may be required by the administrator. The cross sections shall show surface elevations for a distance

beyond the outlines of the affected areas as may be determined by the administrator;

(vi) An estimate of the total cost of reclaiming the affected lands as outlined in the written proposal computed in accordance with established engineering principles;

(vii) A contour map on the same scale as the reclamation map showing to the extent possible the proposed approximate contours of the affected area after completion of proposed reclamation;

(viii) The proposed method of separating topsoil, subsoil, and spoil piled, protecting and conserving them from wind and water erosion before reclamation begins by planting a quick growing cover or other acceptable methods, and the proposed method of preserving topsoil free of acid or toxic materials, as well as the manner in which topsoil shall be replaced. If topsoil is virtually nonexistent or is not capable of sustaining vegetation, then the method of removing, segregating and preserving in a like manner subsoil which is better able to support vegetation. Spoil piles are to be kept separate and apart from topsoil. All piles are to be clearly marked so as to avoid confusion. If conditions do not permit the separation, conservation and replacement of topsoil or subsoil, a full explanation of such conditions shall be given and alternate procedures proposed;

(ix) A plan for insuring that all acid forming, or toxic materials, or materials constituting a fire, health or safety hazard uncovered during or created by the mining process are promptly treated or disposed of during the mining process in a manner designed to prevent pollution of surface or subsurface water or threats to human or animal health and safety. Such method may include, but not be limited to covering, burying, impounding or otherwise containing or disposing of the acid, toxic, radioactive or otherwise dangerous material;

(x) For a surface mining operation granted a new permit after July 1, 1973, and prior to March 1, 1975, except for an operation legally operating under the 1969 Open Cut Land Reclamation Act, an instrument of consent from the surface landowner, if different from the mineral owner, to the mining plan and reclamation plan. If consent cannot be obtained as to either or both, the applicant may request a hearing before the environmental quality council. The council shall issue an order in lieu of consent if it finds:

(A) That the mining plan and the reclamation plan have been submitted to the surface owner for approval;

(B) That the mining plan and the reclamation plan is detailed so as to illustrate the full proposed surface use including proposed routes of egress and ingress;

(C) That the use does not substantially prohibit the operations of the surface owner;

(D) The proposed plan reclaims the surface to its approved future use, in segments if circumstances permit, as soon as feasibly possible.

(xi) For an application filed after March 1, 1975, an instrument of consent from the resident or agricultural landowner, if different from the owner of the mineral estate, granting the applicant permission to enter and commence surface mining operation, and also written approval of the applicant's mining plan and reclamation plan. As used in this paragraph "resident or agricultural landowner" means a natural person or persons who, or a corporation of which the majority stockholder or stockholders:

(A) Hold legal or equitable title to the land surface directly or through stockholdings, such title having been acquired prior to January 1, 1970, or having been acquired through descent, inheritance or by gift or conveyance from a member of the immediate family of such owner; and

(B) Have their principal place of residence on the land, or personally conduct farming or ranching operations upon a farm or ranch unit to be affected by the surface mining operation, or receive directly a significant portion of their income from such farming or ranching operations.

(xii) For any application filed after March 1, 1975, including any lands privately owned but not covered by the provisions of paragraph (b)(xi) of this section an instrument of consent from the surface landowner, if different from the owner of the mineral estate, to the mining plan and reclamation plan. If consent cannot be obtained as to the mining plan or reclamation plan or both, the applicant may request a hearing before the environmental quality council. The council shall issue an order in lieu of consent if it finds:

(A) That the mining plan and the reclamation plan have been submitted to the surface owner for approval;

(B) That the mining plan and the reclamation plan is detailed so as to illustrate the full proposed surface use including proposed routes of egress and ingress;

(C) That the use does not substantially prohibit the operations of the surface owner;

(D) The proposed plan reclaims the surface to its approved future use, in segments if circumstances permit, as soon as feasibly possible;

(E) For surface coal mining operations, that the applicant has the legal authority to extract coal by surface mining methods.

(xiii) The procedures proposed to avoid constituting a public nuisance, endangering the public safety, human or animal life, property, wildlife and plant life in or adjacent to the permit area including a program of fencing all stockpiles, roadways, pits and refuse or waste areas to protect the surface owner's ongoing operations;

(xiv) The methods of diverting surface water around the affected lands where necessary to effectively control pollution or unnecessary erosion;

(xv) The methods of reclamation for effective control of erosion, siltation, and pollution of affected stream channels and stream banks by the mining operations;

(xvi) A statement of the source, quality and quantity of water, if any, to be used in the mining and reclamation operations;

(xvii) A blasting plan which shall outline the procedures and standards by which the operator of a surface coal mine will meet the provisions of W.S. 35-11-415(b)(xi);

(xviii) For surface coal mining operations, a plan to minimize the disturbances to the prevailing hydrologic balance at the minesite and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after mining operations and during reclamation. This paragraph does not alter the authority

granted under any other section of this act with respect to requirements for maintaining the hydrologic balance in the minesite, or associated offsite areas, of other mining operations;

(xix) A projected timetable for accomplishment of the reclamation plan;

(xx) For surface coal mining operations, a request for approval of any alternatives which may be proposed to the provisions of the regulations promulgated by the council. For each alternative provision the applicant shall:

(A) Identify the provision in the regulations promulgated by the council for which the alternative is requested;

(B) Describe the alternative proposed and provide an explanation including the submission of data, analysis and information in order to demonstrate that the alternative is in accordance with the applicable provisions of the act and consistent with the regulations promulgated by the council. In addition, the applicant shall demonstrate that the proposed alternative is necessary because of local requirements or local environmental or agricultural conditions;

(C) Paragraph (xx) of this subsection shall not take effect until approved by the secretary of the interior as an amendment to a state program approved pursuant to section 503 of P.L. 95-87.

(c) The applicant may have the local conservation district assist in preparation of, provide data for, perform research, review and comment upon the reclamation. For those lands in a surface coal mining permit application which a reconnaissance inspection suggests may be prime farm lands, a soil survey shall be made or obtained according to standards established by the United States secretary of agriculture in order to confirm the exact location of these prime farm lands, if any. If the United States secretary of agriculture or his representative has determined that the state, area or exact location within the permit area does not contain prime farm lands this subsection is inapplicable.

(d) The applicant shall file a copy of his application for public inspection at the office of the administrator and in the offices of the county clerks of the counties in which the

proposed permit area is located. Those parts of the application which contain confidential trade secrets whose disclosure would be harmful to the applicant are exempt from these filings.

(e) The administrator shall notify the applicant within sixty (60) days of submission of the application whether or not it is complete. If the administrator deems the application incomplete, he shall so advise and state in writing to the applicant the information required. All items not specified as incomplete at the end of the first sixty (60) day period shall be deemed complete for the purposes of this subsection.

(f) If the applicant resubmits an application or further information, the administrator shall review the application or additional information within sixty (60) days of each submission and advise the applicant in writing if the application or additional information is complete.

(g) After the application is determined complete, the applicant shall publish a notice of the filing of the application once each week for two (2) consecutive weeks in a newspaper of general circulation in the locality of the proposed mining site.

(h) The administrator shall review the application and unless the applicant requests a delay advise the applicant in writing within one hundred fifty (150) days from the date of determining the application is complete, that it is suitable for publication under subsection (j) of this section, that the application is deficient or that the application is denied. All reasons for deficiency or denial shall be stated in writing to the applicant. All items not specified as being deficient at the end of the first one hundred fifty (150) day period shall be deemed complete for the purposes of this subsection. After this period, for noncoal permits, the administrator shall not raise any item not previously specified as being deficient unless the applicant in subsequent revisions significantly modifies the application. If the applicant submits additional information in response to any deficiency notice, the administrator shall review such additional information within thirty (30) days of submission and advise the applicant in writing if the application is suitable for publication under subsection (j) of this section, that the application is still deficient or that the application is denied.

(j) The applicant shall cause notice of the application to be published in a newspaper of general circulation in the

locality of the proposed mining site once a week for four (4) consecutive weeks commencing within fifteen (15) days after being notified by the administrator. The notice shall contain information regarding the identity of the applicant, the location of the proposed operation, the proposed dates of commencement and completion of the operation, the proposed future use of the affected land, the location at which information about the application may be obtained, and the location and final date for filing objections to the application. For initial applications or additions of new lands the applicant shall also mail a copy of the notice within five (5) days after first publication to all surface owners of record of the land within the permit area, to surface owners of record of immediately adjacent lands, and to any surface owners within one-half (1/2) mile of the proposed mining site. The applicant shall mail a copy of the application mining plan map within five (5) days after first publication to the Wyoming oil and gas commission. Proof of notice and sworn statement of mailing shall be attached to and become part of the application.

(k) Any interested person has the right to file written objections to the application with the administrator within thirty (30) days after the last publication of the above notice. For surface coal mining operations, the director may hold an informal conference if requested and take action on the application in accordance with the department's rules of practice and procedure, with the right of appeal to the council which shall be heard and tried de novo. A conference shall be held if the director determines that the nature of the complaint or the position of the complainants indicates that an attempt to informally resolve the disputes is preferable to a contested case proceeding. An informal conference or a public hearing shall be held within twenty (20) days after the final date for filing objections unless a different period is stipulated to by the parties. The council or director shall publish notice of the time, date and location of the hearing or conference in a newspaper of general circulation in the locality of the proposed operation once a week for two (2) consecutive weeks immediately prior to the hearing or conference. The hearing shall be conducted as a contested case in accordance with the Wyoming Administrative Procedure Act, and right of judicial review shall be afforded as provided in that act.

(m) The requested permit, other than a surface coal mining permit, shall be granted if the applicant demonstrates that the application complies with the requirements of this act and all

applicable federal and state laws. The director shall not deny a permit except for one (1) or more of the following reasons:

(i) The application is incomplete;

(ii) The applicant has not properly paid the required fee;

(iii) Any part of the proposed operation, reclamation program, or the proposed future use is contrary to the law or policy of this state, or the United States;

(iv) The proposed mining operation would irreparably harm, destroy, or materially impair any area that has been designated by the council a rare or uncommon area and having particular historical, archaeological, wildlife, surface geological, botanical or scenic value;

(v) If the proposed mining operation will cause pollution of any waters in violation of the laws of this state or of the federal government;

(vi) If the applicant has had any other permit or license issued hereunder revoked, or any bond posted to comply with this act forfeited;

(vii) The proposed operation constitutes a public nuisance or endangers the public health and safety;

(viii) The affected land lies within three hundred (300) feet of any existing occupied dwelling, home, public building, school, church, community or institutional building, park or cemetery, unless the landowner's consent has been obtained. The provisions of this subsection shall not apply to operations conducted under an approved permit issued by the state land commissioner in compliance with the "Open Cut Land Reclamation Act of 1969";

(ix) The operator is unable to produce the bonds required;

(x) If written objections are filed by an interested person under subsection (g) of this section;

(xi) If information in the application or information obtained through the director's investigation shows that

reclamation cannot be accomplished consistent with the purposes and provisions of this act;

(xii) Repealed by Laws 1980, ch. 64, § 3.

(xiii) Repealed by Laws 1980, ch. 64, § 3.

(xiv) Repealed by Laws 1980, ch. 64, § 3.

(xv) If the applicant has been and continues to be in violation of the provisions of this act;

(xvi) No permit shall be denied on the basis that the applicant has been in actual violation of the provisions of this act if the violation has been corrected or discontinued.

(n) The applicant for a surface coal mining permit has the burden of establishing that his application is in compliance with this act and all applicable state laws. No surface coal mining permit shall be approved unless the applicant affirmatively demonstrates and the administrator finds in writing:

(i) The application is accurate and complete;

(ii) The reclamation plan can accomplish reclamation as required by this act;

(iii) The proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area;

(iv) The area proposed to be mined is not included within an area designated unsuitable for surface coal mining pursuant to W.S. 35-11-425, within an area where mining is prohibited pursuant to section 522(e) of P.L. 95-87, or within an area under review for this designation under an administrative proceeding, unless in such an area as to which an administrative proceeding has commenced pursuant to W.S. 35-11-425, the operator making the permit application demonstrates that, prior to January 1, 1977, he has made substantial legal and financial commitments in relation to the operation for which he is applying for a permit;

(v) The proposed operation would:

(A) Not interrupt, discontinue, or preclude farming on alluvial valley floors that are irrigated or naturally subirrigated, but, excluding undeveloped range lands which are not significant to farming on said alluvial valley floors and those lands as to which the administrator finds that if the farming that will be interrupted, discontinued or precluded is of such small acreage as to be of negligible impact on the farm's agricultural production; or

(B) Not materially damage the quantity or quality of water in surface or underground water systems that supply these alluvial valley floors. Paragraph (n)(v) of this section shall not affect those surface coal mining operations which in the year preceding August 3, 1977, produced coal in commercial quantities, and were located within or adjacent to alluvial valley floors or had obtained specific permit approval by the administrator to conduct surface coal mining operations within said alluvial valley floors. If coal deposits are precluded from being mined by this paragraph, the administrator shall certify to the secretary of the interior that the coal owner or lessee may be eligible for participation in a coal exchange program pursuant to section 510(b)(5) of P.L. 95-87.

(vi) If the area proposed to be surface coal mined contains prime farmland, the operator has the technological capability to restore such mined area, within a reasonable time, to equivalent or higher levels of yield as nonmined prime farmland in the surrounding area under equivalent levels of management and can meet the soil reconstruction standards of this act and the regulations promulgated pursuant thereto;

(vii) The schedule provided in paragraph (a)(xiv) of this section indicates that all surface coal mining operations owned or controlled by the applicant are currently in compliance with this act and all laws referred to in paragraph (a)(xiv) of this section or that any violation has been or is in the process of being corrected to the satisfaction of the authority, department or agency which has jurisdiction over the violation.

(o) No permit shall be issued to an applicant after a finding by the director or council, after opportunity for hearing, that the applicant or operator specified in the application controls or has controlled mining operations with a demonstrated pattern of willful violations of such nature and duration with such resulting irreparable harm to the environment as to indicate reckless, knowing or intentional conduct.

(p) The director shall render a decision on the application within thirty (30) days after completion of the notice period if no informal conference or hearing is requested. If an informal conference is held, all parties to the conference shall be furnished with a copy of the final written decision of the director issuing or denying the permit within sixty (60) days of the conference. If a hearing is held, the council shall issue findings of fact and a decision on the application within sixty (60) days after the final hearing. The director shall issue or deny the permit no later than fifteen (15) days from receipt of any findings of fact and decision of the environmental quality council.

35-11-407. Water impoundments.

(a) In any plan for the creation of a permanent water impoundment the applicant must adequately demonstrate that:

(i) The size of the impoundment, contouring and revegetation, if any, are suitable for its intended purpose and use;

(ii) Final grading will provide adequate safety and access for proposed water users;

(iii) The impoundment dam construction will be so designed to insure permanent stability and to prevent safety hazards.

35-11-408. Permit transfer.

A permit holder desiring to transfer his permit shall apply to the administrator. The potential transferee shall file with the administrator a statement of qualifications to hold a permit as though he were the original applicant for the permit and shall further agree to be bound by all of the terms and conditions of the original permit. The administrator shall recommend approval or denial of the transfer to the director. No transfer of a permit will be allowed if the current permit holder is in violation of this act, unless the transferee agrees to bring the permit into compliance with the provisions of this act.

35-11-409. Permit revocation.

(a) The director shall revoke a mining permit if at any time he determines that the permit holder intentionally misstated or failed to provide any fact that would have resulted

in the denial of a mining permit and which good faith compliance with the policies, purposes, and provisions of this act would have required him to provide.

(b) Unless an emergency exists, and except as otherwise provided in this act, the revocation of a permit shall become effective upon thirty (30) days' notice to the operator. In an emergency, a special meeting of the council may cause a revocation to become effective upon receipt of notice by the permit holder.

(c) When an inspection carried out pursuant to the enforcement of this act reveals that a pattern of violations by any surface coal mine operator of any requirements of this act or any permit conditions required by this act has existed, and that these violations were caused by the unwarranted failure of the operator to comply with these requirements or permit conditions, or that these violations are willfully caused by the operator, the director shall issue an order to the operator to show cause why the permit should not be suspended or revoked. Opportunity for a public hearing before the council shall be provided. If a hearing is requested the director shall inform all interested parties of the time and place of the hearing. Upon failure of the operator to show cause why the permit should not be suspended or revoked, the council shall suspend or revoke the permit.

35-11-410. License to mine for minerals; application.

(a) A license to mine is issued for the duration of the mining operation on the permit area unless sooner revoked or suspended as provided herein. No mining operation of any kind may be commenced or conducted without a license to mine.

(b) Any operator desiring to engage in a mining operation shall make a written application to the administrator on forms furnished by the administrator for a license to mine. A license is required for each mining operation for which a separate mining permit is issued. The application shall contain or be accompanied by:

(i) The name and address of the applicant;

(ii) A copy of the mining permit for the lands which are to be affected by the proposed mining operation, and if the applicant is other than the permit holder, a copy of the

instrument of permission from the permit holder granting to the applicant the rights thereto;

(iii) If the applicant for the license is other than the permit holder, a statement that the applicant has never had any permit issued by the administrator revoked, or license issued by the board revoked, or bond posted to comply with the act forfeited for intentional and substantial violation of the provisions of this act;

(iv) The location and number of acres of the area to be affected by the proposed mining operation for the first year of operation if less than the full extent of the permit area;

(v) The estimated dates of commencement and termination of the proposed mining operation;

(vi) A fee of twenty-five dollars ($25.00).

(c) The administrator shall promptly review the license application and if he finds the application in order and consistent with the terms of the permit and any other provisions of this act, the administrator will determine the size of the bond to be posted for the purpose of insuring reclamation of the lands affected during the first year of operation and upon receipt of said bond will promptly issue the license.

35-11-411. Annual report.

(a) An operator shall file an annual report with the administrator on or within thirty (30) days prior to the anniversary date of each permit. The report shall include:

(i) The name and address of the operator and the permit number;

(ii) A report in such detail as the administrator shall require supplemented with maps, cross sections, aerial photographs, photographs, or other material indicating:

(A) The extent to which the mining operations have been carried out;

(B) The progress of all reclamation work;

(C) The extent to which expectations and predictions made in the original or any previous reports have

been fulfilled, and any deviation therefrom, including but not limited to the quantity of overburden removed, the quantity of minerals removed, and the number of acres affected.

(iii) A revised schedule or timetable of operations and reclamation and an estimate of the number of acres to be affected during the next one (1) year period.

(b) Upon receipt of the annual report the administrator shall make such further inquiry as shall be deemed necessary. If the administrator objects to any part of the report or requires further information he shall notify the permittee as soon as possible and shall allow a reasonable opportunity to provide the required information, or take such action as shall be necessary to remove the objection.

(c) As soon as possible after the receipt of the annual report the administrator shall conduct an inspection of the site of the operation. A report of this inspection shall be made a part of the permittee's annual report and a copy shall be delivered to the operator.

(d) Within sixty (60) days after receipt of the annual report, inspection report and other required materials, if the administrator finds the annual report in order and consistent with the reclamation plan as set forth in the permit, or as amended to adjust to conditions encountered during mining and reclamation operations as provided by law, the director shall determine the size of the bond to be posted for the purpose of insuring reclamation of the lands affected during the ensuing year.

35-11-412. License revocation or suspension.

(a) The director shall revoke an operator's license:

(i) If at any time he becomes aware of the existence of any fact, reason, or condition that would have caused him to deny an application for a mining permit whether or not such condition existed at the time of the application;

(ii) If he determines that the operator intentionally misstated or failed to provide any fact that would have resulted in the denial of a license and which good faith compliance with the policies, purposes and provisions of this act would have required him to provide.

(b) The director may suspend the license if he determines the operator is in substantial violation of the terms of the license or of the provisions of this act. The suspension shall be lifted when the violations have been corrected to the director's satisfaction. No suspension shall be unreasonably prolonged.

(c) Unless an emergency exists, the revocation or suspension of a license shall become effective upon thirty (30) days notice to the applicant. In the case of an emergency, the director may cause such revocation or suspension to become effective immediately upon receipt of notice.

35-11-413. Special license to explore for minerals by dozing.

A special license to explore for minerals by dozing may be issued by the administrator for a one (1) year period without a permit.

35-11-414. Special license to explore for minerals by dozing; application; standards; fee; bond; denial; appeal.

(a) Any person desiring to engage in mineral exploration by dozing shall apply to the administrator for a special license. The application shall be in accordance with rules and regulations adopted pursuant to the standards set forth in subsection (b) of this section, by the council upon recommendation by the director after consultation with the administrator and advisory board, and shall be accompanied by a fee of twenty-five dollars ($25.00).

(b) The council shall establish rules and regulations pursuant to the following reclamation standards for exploration by dozing:

(i) Backfilling the topsoil disturbed by dozing to its approximate original contour;

(ii) Revegetation of the land affected by dozing, including species to be used;

(iii) Timetables for the accomplishment of the above reclamation program.

(c) After reviewing the application for special license to explore by dozing the administrator shall set the amount of the

bond necessary to insure complete reclamation and issue the special license to explore.

(d) The administrator may deny the special license to explore if he believes the application is in violation of the purpose of this act.

(e) The decision of the administrator may be appealed through the director to the council.

(f) All special licenses to explore issued by the administrator shall be reviewed by the council at their next regularly scheduled meeting.

(g) A bond posted under the terms of this section shall be released upon completion of the exploration, by dozing, the reclamation program, and an inspection by the administrator. Failure to comply with the provisions of this section will result in forfeiture of the bond.

(h) If the proposed exploration by dozing will substantially affect forty (40) or more acres in any four (4) contiguous sixteenth sections, the application shall conform to the reclamation standards and requirements governing surface mining, and the provisions of this section shall not apply.

(j) Any abandoned drill hole shall be subject to the reclamation provisions of subsection 30-96.16(e) of the statutes.

35-11-415. Duties of operator.

(a) Every operator to whom any permit or license is issued shall comply with all requirements of this act, the rules and regulations promulgated hereunder, and reclamation plans and other terms and conditions of any permit or license.

(b) The operator, pursuant to an approved surface mining permit and mining plan and reclamation plan, or any approved revisions thereto, shall:

(i) Conspicuously post and maintain at each entrance to the operation, a sign which clearly shows the name, address and telephone number of the operator, the name of his local authorized agent, and the permit number of his operation;

(ii) Conduct all surface mining and reclamation activities within the permit area in conformity with his approved plan;

(iii) Protect the removed and segregated topsoil from wind and water erosion, and from acid or toxic materials, and preserve such in a usable condition for sustaining vegetation when restored in reclamation, or if topsoil is virtually nonexistent or is not capable of sustaining vegetation, then subsoil, which is available and suitable, shall be removed, segregated, and preserved in a like manner as may be required in the approved reclamation plan;

(iv) Cover, bury, impound, contain or otherwise dispose of toxic acid forming, or radioactive material or any material determined by the administrator to be hazardous to health and safety, or which constitutes a threat of pollution to surface or subsurface water as may be required in the approved reclamation plan;

(v) Conduct contouring operations to return the land to the use set out in the reclamation plan;

(vi) Backfill or grade, and replace topsoil, or approved subsoil, which has been segregated and preserved as may be required in the approved reclamation plan;

(vii) Replace, as nearly as possible, native or superior self regenerating vegetation on land affected, as may be required in the approved reclamation plan;

(viii) Prevent, throughout the mining and reclamation operation, and for a period of five (5) years after the operation has been terminated, pollution of surface and subsurface waters on the land affected by the institution of plantings and revegetation, the construction of drainage systems and treatment facilities including settling ponds and the casing, sealing of boreholes, shafts, and wells so that no pollution is allowed to drain untreated into surface or subsurface water in accordance with state or federal water quality standards, whichever are higher, as may be required in the approved reclamation plan;

(ix) Reclaim the affected land as mining progresses in conformity with the approved reclamation plan;

(x) For surface coal mining operations, preserve throughout the mining and reclamation process the essential hydrologic functions of alluvial valley floors if these areas are classified within a permit. This paragraph does not alter the authority granted under any other section of this act with respect to requirements for preserving throughout the mining and reclamation process the essential hydrologic functions of the minesite, or associated offsite areas, of other mining operations;

(xi) For surface coal mining operations, insure that explosives are used only in accordance with existing state and federal law and the rules and regulations promulgated by the council, which shall include but are not limited to provisions to:

(A) Provide adequate advance written notice to local governments and residents who might be affected by the use of these explosives by publication of the planned blasting schedule in a newspaper of general circulation in the locality and by mailing a copy of the proposed blasting schedule to every resident within one-half (1/2) mile of the proposed blasting site and by providing daily notice to the resident or occupiers in these areas prior to any blasting;

(B) Maintain for a period of at least three (3) years and make available for public inspection upon request a log detailing the location of the blasts, the pattern and depth of the drill holes, the amount of explosives used per hole, and the order and length of delay in the blast;

(C) Limit the types of explosives and detonating equipment, the size, timing and frequency of blasts based upon the physical conditions of the site so as to prevent:

(I) Injury to persons;

(II) Damage to public and private property outside the permit area;

(III) Adverse impacts on any underground mine;

(IV) A change in the course, channel or availability of ground or surface water outside the permit area.

(D) Require that all blasting operations be conducted by trained and competent persons as certified by the administrator;

(E) Provide that upon the request of a resident or owner of a man-made dwelling or structure within one-half (1/2) mile of any portion of the permitted area the applicant or permittee shall conduct a preblasting survey of these structures and submit the survey to the administrator and a copy to the resident or owner making the request. The area of the survey shall be decided by the administrator and shall include provisions as the United States secretary of the interior shall promulgate.

(xii) For surface coal mining operations, replace in accordance with state law the water supply of an owner of interest in real property who obtains all or part of his supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source where the supply has been affected by contamination, diminution or interruption proximately resulting from the surface coal mine operation.

35-11-416. Protection of the surface owner.

(a) In those instances in which the surface owner is not the owner of the mineral estate proposed to be mined by mining operations a permit shall not be issued without the execution of a bond or undertaking to the state, whichever is applicable, for the use and benefit of the surface owner or owners of the land, in an amount sufficient to secure the payment for any damages to the surface estate, to the crops and forage, or to the tangible improvements of the surface owner. This amount shall be determined by the administrator and shall be commensurate with the reasonable value of the surrounding land, and the effect of the overall operation of the landowner. This bond is in addition to the performance bond required for reclamation by this act. As damage is determined it shall be paid. Financial loss resulting from disruption of the surface owner's operation shall be considered as part of the damage. A bond for surface damage shall not be required when the agreement negotiated between the surface owner and the mineral owner or developer waives any requirement therefor. Payment of damages shall be paid annually unless otherwise agreed to by the surface owner and the operator.

(b) An owner of real property and who holds a valid adjudicated water right and who obtains all or part of his supply of water for domestic, agricultural, industrial, recreational, or other legitimate use from a surface or an underground source other than a subterranean stream having a permanent distinct known channel may maintain an action against an operator to recover damages for pollution, diminution, or interruption of such water supply resulting from surface, in situ mining or underground mining.

35-11-417. Bonding provisions.

(a) The purpose of any bond required to be filed with the administrator by the operator shall be to assure that the operator shall faithfully perform all requirements of this act and comply with all rules and regulations of the board made in accordance with the provisions of this act.

(b) All bonds shall be signed by the operator as principal, by a good and sufficient corporate surety licensed to do business in the state, and be made payable to the state of Wyoming. At the discretion of the director, the record mineral owner of the land to be mined may also be required to join as principal.

(c) The amount of any bond to be filed with the administrator prior to commencing any mining shall be:

(i) For an initial bond the amount equal to the estimated cost of reclaiming the affected land disturbed and restoring, as defined in W.S. 35-11-103(f)(iii), any groundwater disturbed by in situ mining during the first year of operation under each permit. The estimated cost shall be based on the operator's cost estimate submitted with the permit plus the administrator's estimate of the additional cost to the state of bringing in personnel and equipment should the operator fail or the site be abandoned. In no event shall the bond be less than ten thousand dollars ($10,000.00), except for limited mining operations authorized and bonded under W.S. 35-11-401(e) or any noncoal mine the affected land of which, excluding roads, is ten (10) acres or less, in which case the bond amount shall be set by the administrator with approval of the director to cover the cost of reclamation, and in no event less than two hundred dollars ($200.00) per acre, for affected land;

(ii) For renewal bonds the amount equal to the estimated cost of reclaiming the land to be disturbed during

that renewal period, and the estimated cost of completing reclamation of unreleased lands and groundwater disturbed during prior periods of time. The estimated cost shall be based on the operator's cost estimate, which shall include any changes in the actual or estimated cost of reclamation of unreleased affected lands, plus the administrator's estimate of the additional cost to the state of bringing in personnel and equipment should the operator fail or the site be abandoned. In no event shall the bond be less than ten thousand dollars ($10,000.00), except for limited mining operations authorized and bonded under W.S. 35-11-401(e) or any noncoal mine the affected land of which, excluding roads, is ten (10) acres or less, in which case the bond amount shall be set by the administrator with approval of the director to cover the cost of reclamation, and in no event less than two hundred dollars ($200.00) per acre, for affected land.

(d) The council may promulgate rules and regulations for a self-bonding program for mining operations under which the administrator may accept the bond of the operator itself without separate surety when the operator demonstrates to the satisfaction of the director the existence of a suitable agent to receive service of process and a history of financial solvency and continuous operation sufficient for authorization to self-insure or bond this amount. This subsection shall not become operative until the council has promulgated rules and regulations for the self-bonding program which require that the protection provided by self-bonding shall be consistent with the objectives and purposes of this act.

(e) When the reclamation plan for any affected land has been completed, the administrator may recommend to the director the release of up to seventy-five percent (75%) of the bond required for that affected land. The remaining portion of the bond shall be not less than ten thousand dollars ($10,000.00), and shall be held for a period of at least five (5) years after the date of reduction to assure proper revegetation and restoration of groundwater. The retained portion of the bond may be returned to the operator at an earlier date if a release signed by the surface owner and approved by the administrator and director is obtained.

(f) If the area of land or groundwater under permit to be disturbed is increased, then the amount of bond shall be increased to cover the added cost of reclaiming all affected lands or groundwater.

35-11-418. Cash or securities in lieu of bond.

In lieu of a bond, the operator or its principal may deposit federally insured certificates of deposit payable to the Wyoming department of environmental quality, or cash or government securities, or irrevocable letters of credit issued by a bank organized to do business in the United States, or all four.

35-11-419. Bond cancellation.

Such bond may be cancelled by the surety only after ninety (90) days notice to the director, and upon receipt of the director's written consent, which may be granted only when the requirements of the bond have been fulfilled.

35-11-420. Cancellation of surety's license; substitution.

If the license to do business in Wyoming of any surety upon a bond filed pursuant to this act is suspended or revoked by any state authority then the operator, within thirty (30) days after receiving notice thereof, shall substitute a good and sufficient corporate surety licensed to do business in the state. Upon failure of the operator to make substitution of surety within a reasonable period of time, not to exceed sixty (60) days, the director shall suspend the permit of the operator to conduct operations upon the land described in the permit until proper substitution has been made.

35-11-421. Bond forfeiture proceedings.

(a) If the director determines that a performance bond should be forfeited because of any violation of this act, he shall, with the approval of the council, make formal request of the attorney general to begin bond forfeiture proceedings.

(b) The attorney general shall institute proceedings to forfeit the bond of any operator by providing written notice to the surety and to the operator that the bond will be forfeited unless the operator makes written demand to the council within thirty (30) days after his receipt of notice, requesting a hearing before the council. If no demand is made by the operator within thirty (30) days of his receipt of notice, then the council shall order the bond forfeited.

(c) The council shall hold a hearing within thirty (30) days after the receipt of the demand by the operator. At the hearing, the operator may present for the consideration of the

council statements, documents and other information with respect to the alleged violation. At the conclusion of the hearing, the council shall either withdraw the notice of violation or enter an order forfeiting the bond.

35-11-422. Forfeited bond inadequate; suit to recover reclamation costs.

If the forfeited bond is inadequate to cover the costs of the final reclamation program, the attorney general shall bring suit to recover the cost of the reclamation where recovery is deemed possible.

35-11-423. Release of bonds.

(a) No bond shall be finally released until the reclamation program has been completed and approved by the administrator. The director may retain a portion of the bond for at least five (5) years as provided in W.S. 35-11-417, or for so long thereafter as necessary to assure proper revegetation of the reclaimed areas, as provided for in the operator's reclamation plan.

(b) The retained portion of the bond may be returned to the operator at an earlier date if a release signed by the surface owner and approved by the administrator is obtained.

(c) When the operator has completed successfully all surface mining and reclamation activities, he may request release of the retained bond. Upon receipt of the notification and request and within sixty (60) days, the administrator shall inspect and evaluate the reclamation work and report his findings to the director. If the director finds the reclamation meets the requirements of this act, he shall notify the operator and order the state treasurer to release that portion of the final bond. The state treasurer shall then return the bond, cash or securities constituting that portion of the bond so retained. If the director does not approve of the reclamation performed by the operator, he shall notify the operator by registered mail within a reasonable time after the request is filed. The notice shall state the reasons for denial and shall recommend corrective actions. Upon correction of the noted deficiency, the director shall order the state treasurer to release the bond, cash or securities constituting that portion of the bond so retained.

(d) The council shall promulgate rules and regulations governing the release of bonds for surface coal mining operations in compliance with P.L. 95-87 as that law is worded on August 3, 1977, which shall be controlling notwithstanding other provisions of W.S. 35-11-417 and 35-11-423 to the contrary.

35-11-424. Deposit of fees and forfeitures.

(a) All forfeitures collected under the provisions of this act shall be deposited with the state treasurer in a separate account for reclamation purposes.

(b) All fees shall be deposited with the state treasurer in the general fund.

(c) All fines and penalties collected under this act shall be paid to the state treasurer and credited as provided in W.S. 8-1-109.

35-11-425. Designation of areas unsuitable for surface coal mining.

(a) Any person having an interest which is or may be adversely affected may petition the council to have an area designated as unsuitable for surface coal mining operations, or to have a designation terminated. The petition shall contain allegations of facts with supporting evidence which would tend to establish the allegations. Within ten (10) months after receipt of the petition the council shall hold a public hearing in the locality of the affected area, after appropriate notice and publication of the date, time and location of the hearing. After having filed a petition and before the hearing, any person may intervene by filing allegations of facts with supporting evidence which would tend to establish the allegations. Within sixty (60) days after the hearing, the council shall issue and furnish to the petitioner and any other party to the hearing, a written decision with reasons regarding the petition. The hearing need not be held if all petitioners reach agreement prior to the requested hearing and withdraw their request.

(b) If petitioned, the council will review the particular area and:

(i) Shall designate it as an area unsuitable for all or certain types of surface coal mining operations if it is

determined that reclamation pursuant to the requirements of this act is not technologically and economically feasible; and

(ii) May designate it as an area unsuitable for surface coal mining if the coal mining operation will:

(A) Be incompatible with existing state or local land use plans or programs; or

(B) Affect fragile or historic lands in which these operations could result in significant damage to important historic, cultural, scientific and esthetic values and natural systems; or

(C) Affect renewable resource lands in which these operations could result in a substantial loss or reduction of long-range productivity of water supply or of food or fiber products, and these lands to include aquifers and aquifer recharge areas; or

(D) Affect natural hazard lands in which these operations could substantially endanger life and property; these lands to include areas subject to frequent flooding and areas of unstable geology.

(c) Prior to designating any land areas as unsuitable for surface coal mining operations, the administrator shall prepare a detailed statement on:

(i) The potential coal resources of the area;

(ii) The demand for coal resources; and

(iii) The impact of this designation on the environment, economy and supply of coal.

(d) The above process will include proper notice, opportunities for public and agency participation including land use planning bodies and a public hearing prior to designation or redesignation, pursuant to this section.

(e) Any designation shall not prevent the mineral exploration pursuant to this act of any area so designated.

(f) The requirements of this section shall not apply to lands on which surface coal mining operations were being conducted on August 3, 1977 or under a permit issued pursuant to

this act, or where substantial legal and financial commitments in these operations were in existence prior to January 4, 1977.

(g) This section shall not become effective until approval of a state program pursuant to P.L. 95-87.

(h) This section shall operate independently of all other sections of the act except as to the application of the Wyoming Administrative Procedure Act.

35-11-426. In situ mineral mining permits and testing licenses.

(a) Any person desiring to engage in situ mineral mining or research and development testing is governed by this act.

(b) All provisions of this act applicable to a surface coal mining operation, as defined in W.S. 35-11-103(e)(xx), shall apply to coal in situ operations, regardless of whether such operations are connected with existing surface or underground coal mines, including research and development testing licenses, in addition to the requirements of W.S. 35-11-427 through 35-11-436.

35-11-427. In situ mining permit; permit required; authority of land quality division exclusive.

Application for an in situ mining permit shall be made to the director. The director shall designate the land quality administrator as his representative on all matters concerning the application and all communications concerning review of and final action on the application for land, air and water quality divisions and solid waste management. Nothing herein shall be construed to limit the authority of the director on making the final decision on the permit application. No in situ mining operation shall be commenced or conducted unless a valid mining permit has been issued to the operator. Construction and completion of wells may be authorized prior to issuance of a mining permit or a research and development license pursuant to W.S. 35-11-404(g).

35-11-428. In situ mining permit; requirements for application; contents of application.

(a) Application for an in situ mining permit shall meet the requirements of W.S. 35-11-406(a)(i) through (vi) and (viii) through (xiv), and shall contain a description of the proposed

permit area including the following information relating to the applicable in situ technology:

(i) Soils, vegetation, wildlife and surface hydrologic information consistent with the extent and nature of the proposed surface disturbance including descriptions of the soil, indigenous wildlife, natural gamma radiation background for lands to be impacted by radioactive materials, the vegetative cover, meteorological information and a description of any surface water and adjudicated water rights within the proposed permit area or on adjacent lands;

(ii) Geologic and groundwater hydrologic information including:

(A) A description of the general geology including geochemistry and lithology of the permit area;

(B) A characterization of the production zone and aquifers that may be affected including applicable hydrologic and water chemistry data to describe the projected effects of the mining activities.

(iii) A mine plan and a reclamation plan containing the information required by W.S. 35-11-406(b)(ii), (iv) and (viii) through (xix) and:

(A) A description of the mining techniques;

(B) A statement of the past, present and proposed postreclamation use of the land, groundwater and surface water;

(C) A site facility description of the typical design criteria relevant to environmental protection;

(D) A contour map which locates proposed equipment, facilities and appurtenances necessary to insure environmental protection;

(E) An assessment of impact to water resources on adjacent lands that may reasonably be expected and the steps that will be taken to mitigate the impact;

(F) Plans and procedures for environmental surveillance and excursion detection, prevention and control programs;

(G) Procedures for land reclamation including preparation procedures, proposed seeding lists and methods, drainage reestablishment details, post-mining contour map, methods to be used to conduct post-mining radiological evaluations and the methods for mitigating any significant subsidence which may occur as a result of the mining operation;

(H) Procedures for groundwater restoration; and

(J) Estimated costs of reclamation computed in accordance with established engineering principles.

35-11-429. In situ mining permit; contents of permit.

(a) Every permit shall:

(i) Require the operator to give verbal notice of an excursion to the administrator as soon as practical after the excursion is confirmed, followed by reasonable written notice;

(ii) Authorize the administrator to terminate or modify the mining operation if an excursion cannot be controlled or mitigated within the constraints specified in the permit;

(iii) Authorize the council upon the recommendation of the director to modify water quality criteria used for groundwater restoration when information made available after issuance of the permit warrants a modification;

(iv) Prohibit any significant change in mining technique, method of operation, recovery fluid used, mining and reclamation plans or other activities that would jeopardize reclamation or protection of any waters of the state unless a permit revision has been approved by the director pursuant to this act;

(v) Contain other conditions and requirements established by the director to employ the best practicable technology in carrying out this act.

35-11-430. Duties of in situ mining operator; records; annual report.

(a) The operator shall submit an annual report containing the general categories of environmental protection and reclamation information pursuant to W.S. 35-11-411.

(b) The operator shall maintain records at the mine site of all information resulting from monitoring activities required in the permit. The records shall state:

(i) The date, place, time and method of sampling and the personnel responsible for sampling;

(ii) The date on which analysis was performed and the personnel who performed the analysis;

(iii) Analytical techniques used; and

(iv) The results of the analysis.

35-11-431. Research and development license; renewal; application.

(a) A special license to conduct research and development testing may be issued by the administrator for a one (1) year period without a permit and may be renewed annually. An application for a research and development testing license shall be accompanied by a fee of twenty-five dollars ($25.00) and shall include:

(i) The information required by W.S. 35-11-406(a)(i) through (vi), (viii) and (x);

(ii) A description of the nature and scope of the testing activity, of general groundwater hydrology and general geology including the production zone;

(iii) A statement of the present and proposed postreclamation use of the land;

(iv) A reclamation plan which includes the method for groundwater restoration, a statement of the type of vegetation and manner of proposed revegetation or other surface treatment of the affected area and an estimate of the costs of reclamation;

(v) A timetable for the accomplishment of the reclamation plan;

(vi) All requirements of W.S. 35-11-406(j) and (k); and

(vii) Such other information as the administrator deems necessary or as good faith compliance with the provisions of this act requires.

35-11-432. Research and development license; grounds for denial; appeal.

The administrator may deny the special license to conduct research and development testing if he believes the application violates the purpose of this act. The decision of the administrator may be appealed through the director to the council.

35-11-433. Research and development license; bond required; release or forfeiture; review of license.

(a) If a special license to conduct research and development testing is granted, the administrator shall require the licensee to provide a bond in an amount necessary to insure complete reclamation.

(b) A bond posted under the terms of this section shall be released upon completion of the reclamation program and an inspection by the administrator. Failure to comply with this act shall result in forfeiture of the bond.

35-11-434. Research and development license; notice of incomplete application; when application deemed complete.

The administrator shall notify an applicant within ninety (90) days of submission of the application whether or not it is complete. If an application is incomplete, the administrator shall state in writing to the applicant the additional substantive information required.

35-11-435. Records to be filed on completion; abandoned drill holes.

(a) Upon completion of reclamation and abandonment by the operator, the operator shall record with the state engineer's office the location and nature of aquifers that have been affected by the in situ operation.

(b) Any abandoned drill hole shall be subject to the provisions of W.S. 35-11-404.

35-11-436. Existing in situ mining permits.

Any operator who possesses an in situ mining permit and license to mine shall have a period of one (1) year within which to show compliance with the requirements of W.S. 35-11-426 through 35-11-436.

35-11-437. Enforcement for surface coal mining operations.

(a) The director or his designated authorized representative shall issue a cessation order covering that portion of the operation relevant to the violation or hazard and impose any necessary affirmative obligations if:

(i) On the basis of an inspection, it is determined that a condition or practice exists, or violation is occurring, which creates an imminent danger to the public or which is causing or may reasonably be expected to cause significant, imminent environmental harm to land, air or water resources; or

(ii) Any violation of this article, land quality division regulations or permit conditions has not been abated within the time specified in the notice for abatement described in subsection (b) of this section, which period shall not exceed ninety (90) days.

(b) The director or his designated authorized representative shall issue a notice fixing a reasonable time for abatement and impose any necessary affirmative obligations if:

(i) On the basis of an inspection, it is determined that a permittee is in violation of this article, land quality division regulations or any permit conditions; and

(ii) A cessation order is not required under subsection (a) of this section.

(c) Any notice or order issued pursuant to this section may be affirmed, modified, vacated or terminated by:

(i) The director or his authorized representative; or

(ii) The council, if the operator or any person having an interest which is or may be adversely affected files a petition for review within thirty (30) days of the receipt of the notice or order. The council shall order any necessary investigation and provide a public hearing, if requested. Any

public hearing shall be conducted as a contested case proceeding in accordance with the Wyoming Administrative Procedure Act.

(d) The director or, in his absence, the administrator shall affirm, modify, vacate or terminate any notice or order issued pursuant to this section which results in or requires cessation of mining within forty-eight (48) hours of its issuance. If cessation is affirmed, the operator shall be notified of the decision and be afforded an opportunity to request a hearing within ten (10) days of the decision. If a hearing is requested, the director shall fix a time and place for hearing before the council within five (5) calendar days of the request. The council shall affirm, modify or set aside the director's decision within forty-eight (48) hours following the adjournment of the hearing.

(e) Any notice or order issued pursuant to this section may be temporarily stayed pending review by the council if requested by the operator. Any request for a stay shall contain a detailed statement giving reasons for granting the stay. The council shall issue a decision granting or denying the stay in accordance with rules and regulations promulgated by the council.

(f) At the request of any person, a sum equal to the aggregate amount of all costs and expenses (including attorney's fees) as determined by the council to have been reasonably incurred by the person for or in connection with his participation in the proceedings, including any judicial review of agency actions, may be assessed against either party as the court or the council deems proper. This subsection shall apply only to contested case proceedings or subsequent judicial review proceedings under the provisions of this act relating to the regulation of surface coal mining and reclamation operations in accordance with P.L. 95-87, as that law is worded on August 3, 1977. For payments from the department:

(i) Repealed by Laws 1994, ch. 4, §§ 1, 2.

(ii) The contribution of a person who did not initiate a proceeding shall be separate and distinct from the contribution made by a person initiating the proceeding.

(iii) Repealed by Laws 1994, ch. 4, §§ 1, 2.

(g) Repealed by Laws 1994, ch. 4, § 2.

ARTICLE 5
SOLID WASTE MANAGEMENT

35-11-501. Duties of the administrator of the solid and hazardous waste management division.

(a) In addition to the other powers and duties enumerated in this act, the director of the department through the administrator of the solid and hazardous waste management division shall coordinate the activities of all state agencies concerned with solid waste management and disposal. The administrator shall advise and consult with any person or municipality with respect to provisions of technical assistance in solid waste management technology, including collection, storage and disposal.

(b) The administrator of the solid and hazardous waste management division shall enforce and administer this article and the rules, regulations and standards promulgated under this article.

35-11-502. Solid waste management facilities permits; term; renewals.

(a) No person, except when authorized under the permit system established pursuant to this act, shall:

(i) Locate, construct, operate or close a solid waste management facility; or

(ii) Modify the design, construction or operation of a solid waste management facility.

(b) No permit for a solid waste management facility shall be transferred without prior written approval of the director. A permit for a solid waste management facility may be transferred only to a person qualified to obtain and hold bonds or other financial assurances required and who meets the management and technical capability requirements under the rules and regulations promulgated pursuant to this act.

(c) After the effective date of this act no person, except upon a variance from paragraphs (i) through (iv) of this subsection granted by the director upon recommendation of the administrator after public hearing and upon written findings that the variance will not injure or threaten to injure the public health, safety or welfare, shall locate or construct a

solid waste management disposal facility larger than one (1) acre within:

(i) One (1) mile of the boundaries of an incorporated city or town;

(ii) One (1) mile of a public school except with the written consent of the school district board of trustees or one (1) mile of an occupied dwelling house except with the written consent of the owner;

(iii) One-half (1/2) mile of the center line of the right-of-way of a state or federal highway unless screened from view as approved by the department; or

(iv) One-half (1/2) mile of a water well permitted or certificated for domestic or stock watering purposes except with written consent of the owner of the permit or certificate.

(d) No person shall accumulate solid waste at a permitted solid waste management facility in excess of a quantity which can be transferred, treated, processed, stored or disposed of within ninety (90) days however, if the solid waste must be transferred more than two hundred (200) miles, then one hundred eighty (180) days.

(e) The administrator shall notify the applicant within sixty (60) days of submission of the application whether or not it is complete. If the administrator deems the application incomplete, he shall so advise and state in writing to the applicant the information required. All items not specified as incomplete at the end of the first sixty (60) day period shall be deemed complete for the purposes of this subsection.

(f) If the applicant resubmits an application or further information, the administrator shall review the application or additional information within sixty (60) days of each submission and advise the applicant in writing if the application or additional information is complete.

(g) After the application is determined complete, the applicant shall give written notice of the application to the county where the applicant plans to locate the facility and to any municipalities which may be affected by the facility. The applicant shall simultaneously cause to be published once a week for two (2) consecutive weeks in a newspaper of general circulation within the county where the applicant plans to

locate the facility notice of the proposed location, method and length of operation, and such other information as the council may require by rule and regulation. In addition, the council may by rule require an applicant for a proposed permit or for amendment to an existing permit to notify other affected persons of the application and any other information required by the council.

(h) The administrator shall review the application and unless the applicant requests a delay advise the applicant in writing within ninety (90) days from the date of determining the application is complete, that a proposed permit is suitable for publication under subsection (j) of this section, that the application is deficient or that the application is denied. All reasons for deficiency or denial shall be stated in writing to the applicant. All items not specified as being deficient at the end of the first ninety (90) day period shall be deemed complete for the purposes of this subsection. If the applicant submits additional information in response to any deficiency notice, the administrator shall review such additional information within thirty (30) days of submission and advise the applicant in writing if a proposed permit is suitable for publication under subsection (j) of this section, that the application is still deficient or that the director has denied the application.

(j) The applicant shall give written notice of the proposed permit to the governing board of any county where the applicant plans to locate the facility and to any governing board of municipalities which may be affected by the facility. The applicant shall simultaneously cause notice of the proposed permit to be published in a newspaper of general circulation within the county where the applicant plans to locate the facility. The notice shall be published once a week for two (2) consecutive weeks commencing within fifteen (15) days after being notified by the administrator that the application is suitable for publication. The notice shall contain information regarding the identity of the applicant, the location of the proposed operation, the method and length of the operation, the location at which information about the application may be obtained, and the location and final date for filing objections to the application. In addition, the council may by rule require an applicant for a proposed permit or for amendment of an existing permit to notify other affected persons as authorized under subsection (g) of this section.

(k) Any interested person has the right to file written objections to the proposed permit with the director within thirty (30) days after the last publication of the notice given pursuant to subsection (j) of this section. If substantial written objections are filed, a public hearing shall be held within twenty (20) days after the final date for filing objections unless a different period is deemed necessary by the council. The council or director shall publish notice of the time, date and location of the hearing in a newspaper of general circulation in the county where the applicant plans to locate the facility once a week for two (2) consecutive weeks immediately prior to the hearing. The hearing shall be conducted as a contested case in accordance with the Wyoming Administrative Procedure Act, and right of judicial review shall be afforded as provided in that act.

(m) The director shall render a decision on the proposed permit within thirty (30) days after completion of the notice period if no hearing is requested. If a hearing is held, the council shall issue findings of fact and a decision on the proposed permit within thirty (30) days after the final hearing. The director shall issue or deny the permit no later than fifteen (15) days from receipt of any findings of fact and decision of the environmental quality council.

(n) Notwithstanding the requirements of subsections (f) through (m) of this section, the council shall promulgate rules to establish an alternate permitting procedure for low volume or low hazard solid waste treatment, transfer, processing and storage facilities. The rules shall identify classes or categories of solid waste treatment, transfer, processing and storage facilities which may be permitted using the alternate permitting procedure. The alternate procedure may provide, as determined by the council:

(i) For a single public notice by the applicant, unless the application or permit is contested. If the application or permit is contested the provisions of the Wyoming Administrative Procedure Act regarding public notice shall control;

(ii) That public notice shall be limited to notification of interested parties within the area served by the facility or the area where the facility is located;

(iii) For a single review by the department to determine completeness and technical adequacy, which shall be

completed by the department within thirty (30) days of receipt of an initial or revised application; and

(iv) For issuance of a final permit upon completion of all alternate procedure notice and review requirements, provided that any such permit shall be subject to appeal under the provisions of this act.

(o) Effective July 1, 2012, the term for a new or renewed municipal solid waste landfill permit shall be for the lifetime of the solid waste landfill, through closure, not to exceed twenty-five (25) years.

(p) Effective July 1, 2012, for any existing municipal solid waste landfill permit, the next renewal permit shall be converted to a lifetime municipal solid waste permit.

(q) If, during the operation of the municipal solid waste landfill, the life of the municipal solid waste landfill is anticipated to exceed the term specified in the permit, the operator shall:

(i) Submit a municipal solid waste landfill permit amendment which shall include updates on any necessary provisions of the permit;

(ii) No later than three (3) years prior to the expiration of the lifetime municipal solid waste landfill permit, submit permit renewal information as required by the department. The municipal solid waste landfill permit may be renewed for another lifetime period, not to exceed twenty-five (25) years.

(r) Notice and opportunity for hearing for an amended municipal solid waste landfill permit shall be as provided for a new municipal solid waste landfill permit under this section.

35-11-503. Authority to promulgate rules and regulations for solid waste management facilities and for the management of hazardous wastes.

(a) The director, upon recommendation from the administrator after consultation with the water advisory board, is authorized to recommend that the council promulgate rules, regulations, standards and permit systems for solid waste management facilities in order to protect human health and the environment. The rules, regulations, standards and permit

systems shall govern the management of any waste, including liquid, solid, or semisolid waste, which is managed within the boundary of any solid waste management facility, and:

(i) Shall provide requirements as to facility location, design, construction, operation, environmental monitoring, cost effective corrective actions for active facilities, closure, notices of public record, management and technical capabilities of the applicant and post-closure care as necessary to promote the purposes of this act;

(ii) Shall provide requirements for bonding or financial assurance to assure that solid waste management facilities will be constructed, operated and closed in accordance with the purposes and provisions of this act and the rules and regulations promulgated pursuant to this act;

(iii) Within ten (10) months after the effective date of this act the council shall adopt rules and regulations to implement this act and shall provide such reasonable time as may be necessary, but in no event to exceed twenty-four (24) months after the effective date of this act, for owners and operators of solid waste management facilities to comply with the rules, regulations, standards or permits;

(iv) Shall establish categories of solid waste management facilities based on waste type, volume, facility ownership, facility operation or other facility characteristics. Standards and requirements for each category may vary as are necessary to promote the purposes of this act;

(v) Shall provide for consistency and equivalency with rules and regulations adopted by the United States environmental protection agency under authority of Subtitle C of the Resource Conservation and Recovery Act, P.L. 94-580, as amended, for those facilities subject to such federal requirements, provided that:

(A) The director after consultation with the administrator may petition the council to promulgate rules and regulations more stringent than federal rules if adequate cause exists to determine that circumstances specific to the state compel adoption of more stringent rules to adequately protect the public health and environment of the state;

(B) The imposition of the rules under this paragraph is consistent and equivalent with the imposition of

rules by the United States environmental protection agency, except that the director after consultation with the administrator may petition the council to determine for individual permits or orders that adequate cause exists for permit conditions or orders more stringent than federal regulations;

(C) Nothing in this paragraph authorizes the promulgation of rules which are not otherwise authorized in this act.

(b) To the extent not already provided by subsection (a) of this section and W.S. 35-11-504 and notwithstanding W.S. 35-11-424, the director shall, pursuant to this section or by rule, require applicants for commercial radioactive waste management facility permits to do the following:

(i) Upon the filing of the application, pay a fee to be determined by the director, based upon the estimated cost of investigating, reviewing and processing of the application. Unused fees under this subsection shall be refunded to the applicant;

(ii) No less than ten (10) months prior to submission of an application for a commercial radioactive waste management facility permit, submit a notice of intent to file a permit application and a nonrefundable regulatory agency support fee in the amount of one hundred thousand dollars ($100,000.00);

(iii) Upon receipt of a permit and the filing of each annual report thereunder, pay an annual inspection and monitoring fee to be determined by the director, based upon the estimated costs of inspecting the facility and monitoring compliance with the permit terms. Unused funds shall be credited against the next annual inspection and monitoring fee;

(iv) Upon receipt of a permit, establish a long term remediation and monitoring trust for the benefit of the department in an amount sufficient to conduct perpetual monitoring and maintenance of the permitted facility and to remediate the release of any waste or waste constituent in violation of the approved post-closure plan. The long term remediation and monitoring trust may be initially funded by a letter of credit, cash or sufficient bond excepting self-bonds. The letter of credit, cash or bond shall be reduced by an amount equal to the per ton fee levied and paid to the trust during the prior year, provided:

(A) Facilities or portions thereof which the United States government is required by law to accept ownership and assume responsibility for perpetual monitoring, maintenance, and remediation shall not be required to establish a long term remediation and monitoring trust;

(B) Monies actually paid into the long term remediation and monitoring trust on a per ton basis shall be a credit against funds otherwise payable pursuant to W.S. 35-12-113(g)(i); and

(C) All expenses incurred by the department to conduct perpetual monitoring and maintenance of the permitted facility shall be paid by the permittee. The department may contract for temporary professional services to monitor and maintain the permitted facility and to assist in rulemaking.

(v) Reduce, to the extent determined by the director to be technically and economically reasonable, the toxicity of any waste managed at the facility; and

(vi) Follow post-closure land uses established for the facility by the director.

(c) Unless and until the council adopts rules pursuant to subsection (a) of this section, for commercial radioactive waste management facilities or a particular classification of commercial radioactive waste management facilities, the director shall rely upon the performance criteria and standards of title 10, part 40, appendix A, and title 40, part 192, subpart D of the Code of Federal Regulations, as of January 1, 1991, as guidance for determining whether an application complies with the act. Nothing in this subsection shall be construed to limit the director's authority to impose permit requirements or conditions or the council's authority to promulgate rules, consistent with this act, which are more stringent than the federal regulations referenced.

(d) The council shall, upon recommendation from the director and the administrators of the air, water and solid and hazardous waste divisions, promulgate rules and regulations which are:

(i) Necessary for the state to obtain authorization of its hazardous waste management regulatory program to operate in lieu of the federal hazardous waste program administered

under subtitle C of the Resource Conservation and Recovery Act, P.L. 94-580, as amended, provided that the council may not adopt rules requiring imposition of administrative penalties for hazardous waste violations; and

(ii) Subject to the limitations on stringency of paragraph (a)(v) of this section, consistent with, and equivalent to rules and regulations adopted by the United States environmental protection agency under authority of subtitle C of the Resource Conservation and Recovery Act, P.L. 94-580, as amended.

35-11-504. Bonding for solid waste management facilities.

(a) The council, by rules and regulations, shall establish bonding or financial assurance requirements for solid waste management facilities to assure there are adequate sources of funds to provide for cost effective:

(i) Closure costs, post-closure inspection and maintenance costs, and environmental monitoring and control costs, including but not limited to costs for:

(A) Removal and disposal of buildings, fences, roads and other facility developments, and reclamation of affected lands;

(B) Construction of any waste cover or containment system required as a condition of any facility permit;

(C) Removal and off-site treatment or disposal of any wastes that are being stored or treated;

(D) Decontamination, dismantling and removal of any waste storage, treatment or disposal equipment or vessels;

(E) Operating any environmental monitoring systems or pollution control systems that are required as a condition of any facility permit or by order of the director; and

(F) Conducting, only for disposal facilities, periodic post-closure inspections of cover systems, surface water diversion structures, monitor wells or systems, pollutant detection and control systems, and performing maintenance activities to correct deficiencies that are discovered.

(ii) In the event of any discharge of pollution to the air, land or to waters of the state which is in violation of a permit, standard, rule or requirement established under the provisions of this act, the estimated costs of remedying or abating the violation or damages caused by the violation;

(iii) The bond established under paragraph (i) of this subsection shall be available during the operating life and throughout the post-closure care period of the solid waste management facility to abate or remedy any violation of a permit, standard, rule or requirement established under the provisions of this act.

(b) The amount of any bond or financial assurance requirement shall be established by the director in accordance with procedures contained in rules and regulations of the council, but shall not be less than an amount sufficient to satisfy the purposes specified in subsection (a) of this section.

(c) Rules and regulations of the council promulgated to implement the bonding or financial assurance requirements of this section shall exempt any solid waste management facility:

(i) Owned or operated by a municipality provided that the facility is a participating facility under W.S. 35-11-515(o)(iii);

(ii) Owned and operated by the person disposing of solid waste generated at the facility who annually demonstrates to the director compliance with the financial responsibility requirements of the Resource Conservation and Recovery Act, P.L. 94-580, as amended as of January 1, 1989;

(iii) Which is also subject to bonding or financial assurance requirements under article 2, 3 or 4 of this act if the director determines that the bond or financial assurances under article 2, 3 or 4 satisfy the requirements of this section;

(iv) Which is subject to bonding or financial assurance requirements under W.S. 30-5-104(d)(i)(D) or 30 U.S.C. § 226(g) as amended as of January 1, 1989; or

(v) Owned or operated by an electric utility disposing of solid waste generated by an electric generation

facility pursuant to a permit or license issued by the department, provided that the exemption may be revoked by the council upon petition of the director for a period of time established by the council to secure remedial action in the event of any discharge of pollution to the air, land or to waters of the state which is in violation of a permit, standard, rule or requirement established under the provisions of this act.

(d) The council shall provide rules for the establishment of a self-bonding program to be used if such a program will provide protection consistent with the objectives and purposes of article 5 of the act. In any such program, rules of the council shall provide for a timely reappraisal of pledged assets, require evidence of a suitable agent to receive service of process, assure that pledged assets are not already pledged for other projects, provide that pledged assets reside continuously in the state of Wyoming and provide for determination of the suitability of pledged assets.

(e) In lieu of a bond, the operator may deposit federally insured certificates of deposit payable to the Wyoming department of environmental quality, cash, government securities, or irrevocable letters of credit issued by a bank organized to do business in the United States, or all four (4).

(f) Any bond may be cancelled by the surety only after ninety (90) days written notice to the director, and upon receipt of the director's written consent, which may be granted only when the requirements of the bond have been fulfilled.

(g) If the license to do business in Wyoming of any surety upon a bond filed pursuant to this act is suspended or revoked by any state authority then the operator, within thirty (30) days after receiving notice thereof, shall substitute a good and sufficient corporate surety licensed to do business in the state. Upon failure of the operator to make substitution of surety within a reasonable period of time, not to exceed sixty (60) days, the director shall suspend the permit of the operator to accept solid wastes until proper substitution has been made.

(h) Bond forfeiture proceedings shall occur only after the department provides notice to the operator and surety pursuant to W.S. 35-11-701 that a violation exists and the council has approved the request of the director to begin forfeiture proceedings.

(j) With the approval of the council the director may:

(i) Expend forfeited funds to remedy and abate the circumstances with respect to which the bond was provided; and

(ii) Expend funds from the account under W.S. 35-11-424 to remedy and abate any immediate danger to human health, safety and welfare.

(k) If the forfeited bond or other financial assurance instrument is inadequate to cover the costs to carry out the activities specified in subsection (a) of this section, or in any case where the department has expended account monies under subsection (j) of this section, the attorney general shall bring suit to recover the cost of performing the activities where recovery is deemed possible.

(m) When the director determines that the violation has been remedied or the damage abated, the director shall release that portion of the bond or financial assurance instrument being held under paragraph (a)(ii) of this section. When the director determines that closure activities have been successfully completed at any solid waste management facility, the director shall release that portion of the bond or financial assurance instrument being held to guarantee performance of activities specified in subparagraphs (a)(i)(A) through (E) of this section. For solid waste management facilities other than landfills for the disposal of municipal wastes, the remaining portion of the bond or financial assurance instrument shall be held for a period of not less than five (5) years after the date of facility closure, or so long thereafter as necessary to assure proper performance of any post-closure activities specified in subparagraph (a)(i)(F) of this section. For municipal solid waste management facilities, the period shall be the minimum necessary to comply with P.L. 94-580. The retained portion of the bond or other financial assurance instrument may be returned to the operator at an earlier date if the director determines that the facility has been adequately stabilized and that environmental monitoring or control systems have demonstrated that the facility closure is protective of public health and the environment consistent with the purposes of this act.

(n) No supplemental bond or financial assurance shall be required of any facility, mine, permit or license subject to the bond or financial assurance requirements of article 2, 3 or 4 of this act, to meet the requirements of this section, for any

solid waste management facility used solely for the management of wastes generated within the boundary of the permitted facility or mine operation by the facility or mine owner or operator, or from a mine mouth electric power plant or coal drier.

35-11-505. Existing regulations remain in effect.

The Wyoming solid waste management rules and regulations, promulgated by the council in 1975 and amended in 1980, shall remain in effect until amended, repealed or otherwise revised by the council.

35-11-506. Applications subject to penalty of perjury.

All applications submitted pursuant to this chapter shall be signed under oath subject to penalty of perjury by the applicant if an individual, by at least one (1) principal if the application is for a partnership or joint venture, or by at least two (2) principal officers if the application is for a corporation.

35-11-507. Repealed by Laws 1990, ch. 102, § 1.

35-11-508. Recycling and processing requirements for commercial solid waste management facilities.

(a) In recognition of the need to minimize unnecessary uses of the land for solid waste management, to allow for an effective ability for state oversight, regulation and inspection of solid wastes intended to be managed in the state and to conserve natural resources in accord with the policy and purpose of this act, commercial solid waste management facilities shall conform to the following operating practices:

(i) Solid wastes shall be screened by the facility operator in a manner approved by the director to assure to the maximum practical extent that wastes prohibited from disposal at the facility are not managed or disposed of at the facility. Management or disposal of any prohibited waste by a facility shall be cause for the council to issue a cessation order preventing continued receipt of solid wastes at the facility. The order shall remain in effect until the director approves a revised waste screening plan submitted by the facility operator which the director deems sufficient to prevent receipt of wastes prohibited from disposal at the facility;

(ii) Solid wastes shall be processed within the state to facilitate inspections of processing by the department, and removal and recovery of useful components of the waste stream as required by this section, using processes found to be acceptable in rules and regulations promulgated by the council including but not limited to grinding, shredding, incineration or composting;

(iii) Rules and regulations of the council shall establish minimum acceptable removal and recovery rates for useful components of the solid waste stream. Such rates may be established for the facility as a whole, or may differ for different components of the solid waste stream;

(iv) Following adoption by the council of rules and regulations to implement this section, disposal of useful components of the solid waste stream shall be prohibited at any land disposal facility in the state;

(v) Residues remaining following processing, separation and reclamation of useful components of the solid waste stream shall be treated, stored or disposed in compliance with the requirements of this act.

(b) For purposes of this section useful components of the solid waste stream include but are not limited to energy, glass, ferrous and nonferrous metals, paper products and organic matter.

(c) Compliance with the requirements of this section for commercial solid waste management facilities does not limit any other requirements which may be applicable to such facilities under the act, nor any applicable local rule or ordinance.

35-11-509. Lead acid batteries; land disposal prohibited.

(a) No person shall place a used lead acid battery in mixed municipal solid waste, discard or otherwise dispose of a lead acid battery except by delivery to an automotive battery retailer or wholesaler, to a collection or recycling facility authorized under the laws of Wyoming, or to a secondary lead smelter permitted by the environmental protection agency.

(b) No automotive battery retailer shall dispose of a used lead acid battery except by delivery to the agent of a battery wholesaler, to a battery manufacturer for delivery to a secondary lead smelter permitted by the environmental protection

agency, to a collection or recycling facility authorized under the laws of Wyoming or to a secondary lead smelter permitted by the environmental protection agency.

(c) Each battery improperly disposed of shall constitute a separate violation.

(d) Each violation of this section is a misdemeanor subject to a fine not to exceed one hundred dollars ($100.00).

35-11-510. Lead acid batteries; collection for recycling.

(a) A person selling lead acid batteries at retail or offering lead acid batteries for retail sale in the state shall:

(i) Accept, at the point of transfer, in a quantity at least equal to the number of new batteries purchased per year, used lead acid batteries from customers, if offered by customers; and

(ii) Post written notice which shall be at least eight and one-half (8 1/2) inches by eleven (11) inches in size and shall contain the universal recycling symbol and the following language:

(A) It is illegal to discard a motor vehicle battery or other lead acid battery;

(B) Recycle your used batteries; and

(C) State law requires us to accept used motor vehicle batteries or other lead acid batteries for recycling in exchange for new batteries purchased.

35-11-511. Automotive battery retailers required to post notice; penalty.

The department shall produce, print and distribute the notices required by W.S. 35-11-510 to all places where lead acid batteries are offered for sale at retail. Failure to post the required notice shall subject the establishment to a fine of one hundred dollars ($100.00).

35-11-512. Lead acid battery wholesalers.

Any person selling new lead acid batteries at wholesale shall accept, at the point of transfer, in a quantity at least equal

to the number of new batteries purchased per year, used lead acid batteries from customers, if offered by customers. A person accepting batteries in transfer from an automotive battery retailer shall be allowed a period not to exceed one hundred twenty (120) days to remove batteries from the retail point of collection.

35-11-513. Penalties.

Violations of W.S. 35-11-510 and 35-11-512 are misdemeanors subject to a penalty of up to seven hundred fifty dollars ($750.00).

35-11-514. Approval of commercial solid waste management, commercial incineration and disposal facilities.

(a) No construction shall commence of, nor shall any wastes be accepted or received at, any commercial solid waste management facility, or any commercial waste incineration or disposal facility subject to regulation under W.S. 35-12-102(a)(vii) unless the facility has been approved by resolution of the board of county commissioners of the county where the proposed facility is to be located. The county commissioners shall hold one (1) or more public hearings before making their decision. The county commissioners shall publish notice of each hearing in a newspaper of general circulation in the area of the proposed facility once each week for at least two (2) consecutive weeks prior to the hearing. The board of county commissioners may authorize a proposed facility upon considering that the facility:

(i) Is necessary and meets industrial, socioeconomic or municipal needs for additional capacity to manage wastes;

(ii) Reduces industry or municipal reliance on waste management methods which would be less suitable for the protection of the environment or public health than would be possible by the proposed facility; and

(iii) Employs the best available technology to protect public health, safety and the environment, and is located so as to ensure maximum protection of public health, safety and the environment as compared to other alternative methods and locations.

(b) Nothing in this section shall be construed as exempting any commercial solid waste management facility, or any

commercial waste incineration or disposal facility from any other provision of this act or the Industrial Development and Information Siting Act.

35-11-515. Account created for the guarantee of costs for closure and post-closure care for municipally owned or operated solid waste disposal facilities.

(a) There is created an expendable trust account to provide a guarantee that adequate monies will be available to close and conduct post-closure monitoring at municipal solid waste disposal facilities, in compliance with the requirements of this article and applicable federal law. Monies shall be paid into and from the account in accordance with this section. Interest earned on investments from the account shall be credited back to the account.

(b) Any municipal solid waste disposal facility shall be eligible to participate in the account but shall not be required to participate. Participating facilities shall be eligible for the guarantees provided in subsection (c) of this section. Nonparticipating facilities shall not be eligible for the guarantees provided in subsection (c) of this section. Nonparticipating facilities may either separately or together, take necessary action to comply with state or federal closure and post-closure regulations.

(c) Participating facilities are exempt from any requirement under W.S. 35-11-504(c) pertaining to financial assurance requirements for closure and post-closure care of municipal solid waste disposal facilities. The state hereby guarantees, for purposes of compliance with subtitle D of the Resource Conservation and Recovery Act, P.L. 94-580, and W.S. 35-11-504(a)(i), that the closure and post-closure care requirements of participating facilities will be satisfied by the provisions of this section.

(d) Each participating facility shall:

(i) Once every four (4) years prepare a closure and post-closure cost estimate in accord with rules of the council; or

(ii) Agree to use a standard closure and post-closure cost estimate prepared by the director.

(e) Each participating facility shall once every four (4) years calculate the remaining usable solid waste disposal capacity available at the facility, expressed in years. The procedures for calculating remaining capacity shall be prescribed by the director, after consultation with representatives of the participating facilities.

(f) Each participating facility shall pay annually into the account a premium, the sum of which at facility closure will equal no less than three percent (3%) of the sum of the closure and post-closure costs estimates specified in subsection (d) of this section.

(g) At any time following the proper certification of facility closure in compliance with rules of the council, a participating facility owner may apply to the director to receive a refund of the closure guarantee costs which have been paid into the account on behalf of the facility.

(h) At any time following the proper certification of the conclusion of the post-closure period in compliance with rules of the council, a participating facility owner may apply to the director to receive a refund of the post-closure guarantee costs which have been paid into the account on behalf of the facility.

(j) The council is authorized to adopt rules governing payment requirements, expenditures from the account, notifications by owners, disclosures of information, and any other administrative matter associated with the account. Rules of the council shall prescribe that participating facilities electing to cease participating in the account, or applying for refunds under subsection (g) or (h) of this section, shall be entitled to a refund limited to ninety percent (90%) of the actual contribution paid by the facility, less any expenditures paid from the account on behalf of the facility which have not been recovered under subsection (m) of this section.

(k) The director shall use the account to perform closure or post-closure maintenance activities at any participating facility, if the facility owner is unable to carry out those responsibilities. The director, subject to appeal to the council, shall determine the amounts of any expenditures from the account.

(m) The attorney general shall file suit to recover any funds expended under subsection (k) of this section.

(n) Nothing in this section shall relieve any owner or operator of a solid waste management facility of the requirement to comply with applicable closure or post-closure requirements of this act. No third party cause of action is created by this section. Existence of the account does not limit the liability of any owner of a municipal solid waste disposal facility for damages or costs which may occur as the result of any failure to close, or conduct post-closure maintenance, in compliance with this act.

(o) For the purpose of this section:

(i) "Account" means the account created by subsection (a) of this section;

(ii) "Municipal solid waste disposal facility" means a solid waste landfill or land disposal facility which is owned or operated by a municipality and which receives any solid wastes, including garbage, trash and sanitary waste in septic tanks, derived from households and nonhazardous industrial waste;

(iii) "Participating facility" means a municipal solid waste disposal facility which elects to participate and is participating in the account in accordance with the requirements of this section.

35-11-516. Regulation of hazardous waste generators and transporters.

(a) Each person who generates or transports hazardous waste in an amount which would otherwise subject the person to regulation under subtitle C of the Resource Conservation and Recovery Act, P.L. 94-580, shall comply with the following requirements:

(i) Each generator shall:

(A) Keep adequate records of quantities, composition and disposition of the hazardous waste generated;

(B) Adequately label any containers used for the storage, transport or disposal of hazardous waste;

(C) Use appropriate containers for hazardous waste;

(D) Furnish information as may be required on the general chemical composition and hazardous properties of hazardous waste to persons transporting, treating, storing or disposing the waste;

(E) Use the national hazardous waste shipping manifest system, and employ any other reasonable means to assure that the hazardous waste generated is shipped to and arrives at the designated, authorized hazardous waste treatment, storage or disposal facility;

(F) Submit reports to the department at least once every two (2) years setting out:

(I) The quantities and nature of hazardous waste generated during the year;

(II) The disposition of all hazardous waste reported under this subsection;

(III) The efforts undertaken during the year to reduce the volume and hazardous characteristics of hazardous waste generated; and

(IV) The changes in volume and hazardous characteristics of waste actually achieved during the year reported in comparison with previous years.

(G) Certify, on the shipping manifest required under this subsection, that:

(I) The generator of the hazardous waste has a program in place to reduce the volume or quantity and hazardous characteristics of the waste to the degree determined by the generator to be economically practicable; and

(II) The proposed method of treatment, storage or disposal is that practicable method currently available to the generator that satisfies current regulatory requirements and which minimizes the present and future threat to human health and the environment.

(ii) Each transporter shall:

(A) Keep adequate records of hazardous waste transported, its source and delivery points;

(B) Transport hazardous waste only if it is properly labeled and manifested; and

(C) Transport hazardous waste only to the hazardous waste treatment, storage or disposal facility which the shipper designates on the manifest form, to be a facility holding a permit issued by the United States environmental protection agency, an authorized state or the department.

(b) The council shall, upon recommendation from the director, promulgate rules and regulations to implement the requirements of this section applicable to generators and transporters of hazardous waste, and to fuels produced from hazardous waste and mixtures of hazardous waste and other materials. The rules shall be no more and no less stringent than corresponding rules which have been adopted by the United States environmental protection agency to implement sections 3002 and 3003 of subtitle C of the Resource Conservation and Recovery Act.

35-11-517. Fees applicable to hazardous waste treatment, storage and disposal facility operators.

(a) The department shall implement a permit fee system and schedule of fees which are applicable to hazardous waste treatment, storage and disposal facilities.

(b) Permit fees shall be collected from applicants for permits for any facility subject to subsection (a) of this section, and annually from those existing facilities for the duration of the operating, closure and post-closure permit period. The fees for applicants for permits and the annual fees for inspection and enforcement shall be based on the facility type and size. The department shall develop a fee structure which, to the extent feasible, equitably apportions the department's estimated costs of implementing the requirements of this act applicable to the facilities, which is based on measurable goals, and which is sufficient to recover the amount reviewed by the joint appropriations interim committee and appropriated by the legislature for implementing the hazardous waste treatment, storage and disposal permitting program. The fee amount shall be sufficient to provide adequate enforcement of compliance with the hazardous waste requirements of this act, as required in section 3006(b) of the Resource Conservation and Recovery Act, 42 U.S.C. 6926(b). The department shall prepare a biennium report for review by the joint minerals, business and

economic development interim committee by October 31 of the year prior to the Wyoming legislative budget session.

(c) Fees shall cover all reasonable direct and indirect costs including the costs of:

(i) Reviewing and acting upon any permit application, including applications for major permit amendments;

(ii) Implementing and enforcing permits; and

(iii) Carrying out permit and inspection-related functions performed by the department.

(d) The fees collected by the department pursuant to this section shall be deposited in a separate account, and shall be subject to appropriation by the legislature to the department solely for permitting, conducting inspections under and enforcing the requirements of this act governing facilities subject to subsection (a) of this section.

(e) The department shall give written notice of the amount of the fee to be assessed and the basis for the assessment to the facility owner. The owner may appeal the assessment to the council within forty-five (45) days after receipt of the written notice. The appeal shall be based only upon the allegation that the particular assessment is erroneous or excessive and shall not be based upon the entire fee schedule adopted under this section. The contested case procedures of the Wyoming Administrative Procedure Act shall apply to any appeal under this subsection.

(f) If any part of the assessment is not appealed it shall be paid to the department upon receipt of the written notice.

(g) The department in developing a fee schedule shall take into account the financial resources of small businesses as defined by the United States small business administration.

(h) Nothing in this section shall be construed to limit or modify any requirement of W.S. 35-11-503(b) with respect to fees for commercial radioactive waste management facility permits.

(j) This section shall not become effective until authorization of a state program pursuant to subtitle C of the Resource Conservation and Recovery Act, P.L. 94-580.

35-11-518. Prior federal court orders and administrative orders.

(a) The department may become a party to, or assume the rights and duties of the federal government for, any federal court order which has been issued pursuant to subtitle C of the Resource Conservation and Recovery Act, P.L. 94-580, prior to the effective date of the authorization of the state hazardous waste program under that subtitle. Any person subject to a prior federal court order issued pursuant to subtitle C of the Resource Conservation and Recovery Act, shall not be subject to any additional, conflicting or more restrictive remedial or corrective action order or requirement under this act with respect to the hazardous waste management unit, solid waste management unit or area of concern that is the subject of the federal court order, unless required to comply with new requirements adopted under the Resource Conservation and Recovery Act. If the department becomes a party to, or assumes the rights and duties of the federal government for, any prior federal court order, the department shall be governed by, and subject to, the dispute resolution procedures of the federal court which retains jurisdiction for the order and may, within those procedures and under the law governing the federal order, seek any remedy, change, amendment or other relief relating to the order.

(b) The department may issue an administrative order which is equivalent to any federal administrative order which has been issued pursuant to subtitle C of the Resource Conservation and Recovery Act, prior to the effective date of the authorization of the state hazardous waste program under that subtitle. The limitations regarding stringency contained in subsection (a) of this section apply to orders issued under this subsection. Following the issuance of any order under this subsection, any disputes concerning implementation of the order shall be resolved by appeal to the council as provided by this act. Any person aggrieved or adversely affected in fact by a final decision of the council is entitled to judicial review in accordance with the Wyoming Administrative Procedure Act.

35-11-519. Hazardous waste corrective action requirements.

Corrective action requirements applicable to any hazardous waste management facility shall be consistent with, and equivalent to, corrective action requirements contained in rules and regulations adopted by the United States environmental protection agency under authority of subtitle C of the Resource

Conservation and Recovery Act, P.L. 94-580, as amended by the hazardous and solid waste amendments of 1984, P.L. 98-616, and as they may be hereafter amended.

35-11-520. Termination of state regulation of hazardous waste generators and transporters; procedures.

(a) The department shall report to the legislature any reduction in federal hazardous waste grant funds supplied to the state under section 3011 of the Resource Conservation and Recovery Act (42 U.S.C. 6931), which results in the need for additional state funds, exclusive of fees under W.S. 35-11-517, to administer W.S. 35-11-516 through 35-11-520.

(b) The provisions of W.S. 35-11-516 through 35-11-519 shall not be effective one hundred eighty (180) days after the adjournment of the legislative session next following the submission of a report under subsection (a) of this section, unless the legislature appropriates the additional funds required. The expiration of the state program pursuant to this subsection shall be subject to the following:

(i) The annual fee collected by the department under W.S. 35-11-517 shall be remitted to the facility owner on a prorated basis upon termination of regulation by the state under this section;

(ii) The department shall vacate any order issued to any generator or transporter to enforce any provision of W.S. 35-11-516 through 35-11-519;

(iii) The state attorney general may continue to prosecute any action based on alleged violations of W.S. 35-11-516 through 35-11-519 which was filed prior to the adjournment of the legislative session referred to in subsection (b) of this section.

35-11-521. Grants for municipal solid waste landfill monitoring.

(a) Subject to the availability of funds, the director shall provide grants toward the costs of performing activities specified in subsection (b) of this section to local governmental entities who own or are responsible for any municipal solid waste landfill, for any project where a work plan has been submitted to the department for work performed or initiated after July 1, 2005.

(b) Grant funding under this section may be provided at existing or closed municipal solid waste landfills for the following activities:

(i) Conducting surface or subsurface geophysical studies to determine proper monitor system placement and to provide an indication of the presence or absence of groundwater beneath and adjacent to the landfill;

(ii) Preparing plans for installation of systems to monitor or detect releases of subsurface pollutants from landfills;

(iii) Installing new monitor systems or upgrading existing monitor systems to meet standards for the systems established by the department under this article; and

(iv) Collecting and analyzing samples from monitor systems installed under paragraph (iii) of this subsection, for a period of time sufficient to determine if there have been releases of subsurface pollutants from the landfill for any landfill which ceased receipt of solid wastes before September 13, 1989.

(c) Grants for eligible costs under subsection (b) of this section may be awarded:

(i) For up to fifty percent (50%) of the eligible costs; or

(ii) For up to seventy-five percent (75%) of eligible costs for applicants meeting the following criteria:

(A) Municipalities with a population of less than one thousand three hundred (1,300) or which are located within a county where the three (3) year average of the total local government share of state sales and use tax per capita is less than seventy percent (70%) of the statewide per capita average; or

(B) Counties, solid waste disposal districts, joint powers boards, and special purpose districts located within a county with a total assessed valuation of less than two and one-half percent (2.5%) of the state's total assessed valuation.

35-11-522. Grant criteria; submission and review of grant applications; recommendation from water and waste advisory board; grant awards.

(a) Following public notice and hearing before the water and waste advisory board, the department shall adopt criteria for awarding grants under W.S. 35-11-521.

(b) When funds are available, applications for grants under W.S. 35-11-521 shall be submitted in a form approved by the department. The department shall review all grant applications, determine the eligibility of projects in accordance with W.S. 35-11-521 and provide recommendations for grant funding to the water and waste advisory board.

(c) Following a public hearing, the water and waste advisory board shall provide recommendations for grant awards to the director.

(d) The director shall award grants in consideration of recommendations provided by the water and waste advisory board.

(e) Repealed By Laws 2011, Ch. 110, § 3.

35-11-523. Annual report.

(a) Effective January 1, 2012, every operator shall file an annual report with the administrator on or within thirty (30) days prior to the anniversary date of each lifetime permit. The report shall include:

(i) The facility name, the name and address of the operator and the permit number;

(ii) A report in such detail as the administrator shall require supplemented with maps, cross sections, aerial photographs, photographs or other material indicating:

(A) The extent to which the landfill operations have been carried out;

(B) The progress of all landfill work;

(C) The extent to which regulatory requirements, expectations and predictions made in the original permit or any previous annual reports have been fulfilled, and any deviation there from, including but not limited to the capacity of

landfill used, the results of any environmental monitoring, any remediation required or completed and the remaining usable municipal solid waste landfill capacity.

(iii) A revised schedule or timetable of landfill operations and an estimate of the available capacity to be affected during the next one (1) year period.

(b) Upon receipt of the annual report the administrator shall make such further inquiry as deemed necessary. If the administrator objects to any part of the report or requires further information he shall notify the operator as soon as possible and shall allow a reasonable opportunity to provide the required information, or take such action as necessary to resolve the objection.

(c) Within forty-five (45) days after the receipt of the annual report the administrator shall conduct an inspection of the landfill. A report of this inspection shall be made a part of the operator's annual report and a copy shall be delivered to the operator.

(d) Within sixty (60) days after receipt of the annual report, inspection report and other required materials, if the administrator finds the annual report in order and consistent with the landfill operation plan and solid waste management plan as set forth in the permit, or as amended to adjust to conditions encountered during landfill operations as provided by law, the director shall determine if any adjustment is necessary to the size of the bond required pursuant to W.S. 35-11-504.

35-11-524. Municipal solid waste landfill assessments; priority list; monitoring.

(a) The department shall conduct an assessment of the needs for municipal solid waste landfill monitoring and the necessity for any remediation on leaking municipal solid waste landfills in Wyoming.

(b) The department shall establish a priority list for municipal solid waste landfills that need remediation. The criteria used to establish this priority list shall be developed and reviewed with the water and waste advisory board. The criteria shall include, but not be limited to the:

(i) Type of leachate;

(ii) Volume of leachate;

(iii) Proximity of the leachate to the nearest surface or ground water;

(iv) Ability of the responsible municipality to remediate the contamination;

(v) The nature of contaminants in surface or ground water affected by the municipal solid waste landfill, including whether a contaminant is naturally occurring or manmade; and

(vi) Maximum contaminant levels.

(c) For high priority sites identified on the list established under subsection (b) of this section, the department shall work with the local managers of the high priority municipal solid waste landfills to gather data necessary for the report due under subsection (d) of this section.

(d) The department shall submit to the joint minerals, business and economic development interim committee:

(i) No later than December 31, 2012, an initial report describing an assessment of the clean-up costs at the high priority municipal solid waste landfills;

(ii) No later than June 30, 2013, and annually thereafter, a report including, but not limited to:

(A) Monitoring results;

(B) Remediation results;

(C) The assessment of the clean-up costs at municipal solid waste landfills, including high, medium and low priority landfills;

(D) Estimated high priority sites to be addressed in the coming year;

(E) Orphan landfill sites information and data as required pursuant to W.S. 35-11-525(e).

35-11-525. Orphan landfill sites.

(a) The director may expend funds contained within the account for remediation of orphan landfill sites and the performance of any other activity as defined in this article.

(b) As used in this section, "orphan landfill site" means:

(i) A landfill where the department determines:

(A) There is no viable party responsible for causing or contributing to the landfill site; and

(B) The landfill site is not the result of activities conducted on the site after September 13, 1989.

(ii) A landfill site, where the department determines that the person responsible for the landfill cannot be identified;

(iii) A landfill site where the department must take prompt action to prevent hazards to human health or the environment where a responsible party fails to act promptly.

(c) To the extent funds are available, the department may expend funds from the account to conduct orphan landfill site evaluations and testing, evaluate remedial measures, select remediation requirements and construct, install, maintain and operate systems to remedy contamination in accordance with a remediation work plan prescribed by the director for the orphan landfill site.

(d) Revenue to the account shall include any monies which may be deposited in the account for use in identification, characterization, prioritization, remediation and monitoring of orphan landfill sites. The liability of the state to fulfill the requirements of this section is limited to the amount of funds available in the account.

(e) The department shall provide a report to the joint appropriations interim committee and the joint minerals, business and economic development interim committee. The report shall be included in the report required under W.S. 35-11-524(d) and shall include:

(i) The work completed on the identification, characterization, prioritization, remediation and monitoring of orphan landfill sites within the state;

(ii) The estimated funding need for the identification, characterization, prioritization, remediation and monitoring of orphan landfill sites within the state for:

(A) The next year or the next biennium, as applicable; and

(B) The next ten (10) years.

(f) In any case under paragraph (b)(iii) of this section where the department expends funds to remediate or contain contamination resulting from a landfill, and where the department has identified a responsible party, the responsible party shall reimburse the department in an amount equal to two (2) times the expenditure from the account. The attorney general shall bring suit to recover the reimbursement amount required in this subsection where recovery is deemed possible.

(g) For purposes of this section, "account" means the account created under W.S. 35-11-515(a).

35-11-526. Performance based design and performance based evaluation in consideration and approval of engineered containment systems as part of municipal solid waste landfill permits.

(a) A person submitting an application for a permit pursuant to W.S. 35-11-502 which contains a performance based design for a municipal solid waste landfill that does not incorporate an engineered containment system utilizing a composite liner and leachate collection system, shall submit a report with the application. The report shall contain the applicant's findings as to the proposed performance based design's compliance with applicable state and federal laws and regulations. The report shall contain scientific and engineering data supporting the implementation of the proposed design.

(b) In reviewing scientific and engineering data related to a permit application and report containing a performance based design which does not incorporate an engineered containment system utilizing a composite liner and leachate collection system, the administrator shall prepare a detailed performance evaluation based on applied scientific and engineering data that adheres to W.S. 35-11-527. The administrator shall determine in the performance evaluation whether to validate or invalidate the performance based design

or an alternative performance based standard for landfill design contained in the permit application. The administrator shall base the performance based evaluation on acceptable applied scientific and engineering data and an analysis of that data using statistical procedures, including statistical power, when applicable.

(c) The applicant or other interested party may appeal the administrator's determination contained in a performance based evaluation of a permit pursuant to W.S. 35-11-502. If the council determines that the performance based evaluation does not accurately or adequately identify and evaluate all the data and criteria required under this section and W.S. 35-11-527, the council shall direct the administrator to reevaluate his determination. A decision by the council that the performance based evaluation is accurate and adequate shall be a final decision of the agency pursuant to the Wyoming Administrative Procedure Act.

35-11-527. Performance based design evaluation criteria for municipal solid waste landfill units.

(a) New municipal solid waste landfill units and lateral expansions approved by the administrator under W.S. 35-11-502 and 35-11-526 shall be constructed:

(i) In accordance with a performance based design approved by the administrator in a performance based evaluation pursuant to W.S. 35-11-526. Any performance based design approved must ensure that the concentration values for pollutants listed in the National Primary Drinking Water Regulations, 40 C.F.R. Part 141, will not be exceeded in the uppermost aquifer at the relevant point of compliance as determined under subsection (c) of this section; or

(ii) With an engineered containment system that utilizes a composite liner and a leachate collection system that is designed and constructed to maintain less than a thirty (30) centimeter depth of leachate over the liner.

(b) When approving a design that complies with paragraph (a)(i) of this section, in addition to the requirements of W.S. 35-11-526 the administrator shall consider other relevant factors, including, but not limited to:

(i) The hydrogeologic characteristics of the facility and surrounding land;

(ii) The climatic factors of the area; and

(iii) The physical and chemical characteristics and volume of the leachate.

(c) The relevant point of compliance specified by the administrator for the allowable concentration values for pollutants under paragraph (a)(i) of this section shall be no more than one hundred fifty (150) meters from the waste management unit boundary and shall be located on land owned by the owner of the municipal solid waste landfill. In determining the relevant point of compliance, the administrator shall consider at least the following factors:

(i) The hydrogeologic characteristics of the facility and surrounding land;

(ii) The physical and chemical characteristics and volume of the leachate;

(iii) The quantity, quality and direction of flow of ground water in the area;

(iv) The proximity and withdrawal rate of ground water users;

(v) The availability of alternative sources of drinking water supplies;

(vi) The existing quality of the ground water, including other sources of contamination and their cumulative impacts on the ground water and whether the ground water is currently used or reasonably expected to be used for drinking water;

(vii) Public health, safety and welfare effects; and

(viii) Practicable capability of the owner or operator.

35-11-528. Municipal solid waste facilities cease and transfer program created; criteria for grants and loans; loan terms; availability of other state funding sources.

(a) There is created the municipal solid waste facilities cease and transfer program. Grants and loans under the program

shall be awarded by the state loan and investment board. The program shall be administered by the solid and hazardous waste division of the department of environmental quality with the input of the waste and water advisory board as provided in W.S. 35-11-528 through 35-11-531.

(b) Grants and loans shall be made from the municipal solid waste facilities cease and transfer accounts for all cease and transfer activities as provided in this section and by rule and regulation of the board. Grants and loans shall be made for:

(i) Capping of a closed landfill;

(ii) Other closure related expenses including engineering, geological and other professional services;

(iii) Construction or acquisition of appropriate solid waste transfer facilities and equipment, including acquisition of real property.

(c) Total costs of cease and transfer activities for a municipal solid waste facility shall be determined by the department in consultation with the local municipal solid waste facility operator. Grants shall be awarded in an amount determined by the state loan and investment board after consultation with the department and pursuant to the criteria contained in subsection (d) of this section. A municipal solid waste facility which is ceasing operations shall be eligible to receive loans for the costs of cease and transfer activities not funded by a grant pursuant to subsection (e) of this section.

(d) Except as provided in subsection (h) of this section, grants and loans for cease and transfer activities shall be awarded in an amount determined by the state loan and investment board not to exceed seventy-five percent (75%) of the total cost of all cease and transfer activities of the municipal solid waste facility. The state loan and investment board shall base its determination of the percentage of grants and loans awarded for cease and transfer projects under the program on an equitable distribution of available funds among eligible municipal solid waste landfills and rules and regulations adopted pursuant to W.S. 35-11-530. To be eligible for funding under the program the following criteria shall be met:

(i) The local operator enters into a written agreement with the department to meet all regulatory obligations under the program;

(ii) The local operator implements and revises the community's solid waste management plan as necessary to comply with all regulatory obligations;

(iii) The local operator ceases disposal of all municipal solid waste streams at the closed municipal solid waste facility;

(iv) The local operator conforms to the requirements of W.S. 35-11-532;

(v) The local operator:

(A) Ceases disposal into units and facilities regulated under this article which do not have engineered containment systems or do not conform to performance based design standards; or

(B) Obtains department approval, that shall include a time period determined appropriate by the department for operation, to:

(I) Transfer and dispose municipal solid waste into permitted units and facilities regulated by the department which do not have engineered containment systems or do not conform to performance based design standards, for the purpose of closing the facility that is transferring municipal solid waste; and

(II) Increase the rate at which municipal solid waste is accepted for disposal into permitted units and facilities regulated by the department which do not have engineered containment systems or do not conform to performance based design standards, for the purpose of promoting the early closure of the receiving facility or facilities. If the department grants approval under this subparagraph the receiving facility shall not be allowed to enlarge or extend the life of its facility except in furtherance of becoming a facility with an engineered containment system or conforming to performance based design standards.

(e) Loans may be made under the program at zero interest rate, up to an annual interest rate equal to the average prime

interest rate as determined in accordance with this subsection. Loans provided under the program shall be adequately collateralized as determined by the state loan and investment board. Principal and interest payments shall be deposited in the budget reserve account. The state loan and investment board shall establish interest rates to be charged for loans under the program, but the interest rate shall not exceed an annual interest rate equal to the average prime interest rate as determined by the state treasurer. To determine the average prime interest rate, the state treasurer shall average the prime interest rate for at least seventy-five percent (75%) of the thirty (30) largest banks in the United States. The interest rate shall be adjusted on January 1 of each year. Interest rates shall be established in recognition of the repayment abilities and needs of the local municipal solid waste facility operator eligible for loans under the program. The state loan and investment board shall establish loan amortization schedules, terms and conditions for each loan approved based on an applicant's need, financial condition of the landfill operator or the entity responsible for solid waste funding, the projected life of the transfer facility and the ability of that entity to repay the loan in a timely manner.

(f) Participation in the program shall not restrict funding for a municipal solid waste facility from any other program created or supported by the state.

(g) Funds under the program shall not be expended on:

(i) Salaries or benefits for employees of the municipal solid waste facility;

(ii) Long-term monitoring at a closed municipal solid waste facility or a closed cell of a still operating municipal solid waste facility;

(iii) Operational costs of municipal solid waste facilities.

(h) Upon a showing that a local operator has exhausted all reasonably available funding sources, the director may recommend to the state loan and investment board funding in the form of grants and loans for up to one hundred percent (100%) of the total cost of cease and transfer activities of the municipal solid waste facility. In addition to the requirements contained in subsection (d) of this section, the state loan and investment

board shall base its determination of a grant or loan award under this subsection on whether the local operator:

(i) Has any additional funding sources reasonably available to allocate to project costs;

(ii) Is charging sufficient gate or use fees to fully fund the operational costs of transfer facilities constructed under the program.

35-11-529. Municipal solid waste facilities cease and transfer accounts created; authorized expenditures from the accounts.

(a) There is created the municipal solid waste cease and transfer grant account. Monies from the account shall be awarded for grants to fund approved activities pursuant to W.S. 35-11-528. Interest earned by this account shall be deposited in the budget reserve account. Notwithstanding W.S. 9-2-1008, 9-2-1012(e) and 9-4-207(a), funds deposited in this account shall not revert without further action of the legislature.

(b) There is created the municipal solid waste cease and transfer loan account. Monies from the account shall be awarded for loans to fund approved activities pursuant to W.S. 35-11-528. Interest earned by this account shall be deposited in the budget reserve account. Notwithstanding W.S. 9-2-1008, 9-2-1012(e) and 9-4-207(a), funds deposited in this account shall not revert without further action of the legislature.

35-11-530. Rules and regulations.

(a) The state loan and investment board in consultation with the department of environmental quality shall promulgate rules and regulations necessary to administer the municipal solid waste facility cease and transfer program. Those rules shall include:

(i) Criteria for eligibility under the program based on W.S. 35-11-528(d);

(ii) Specific cease and transfer activities which are eligible for funding under the program;

(iii) Application form and procedure under the program;

(iv) Criteria for grant and loan prioritization based on:

(A) Funding availability;

(B) Cost efficiencies achieved by allocation of resources;

(C) Opportunities for increased cost sharing between cease and transfer actions at multiple leaking municipal solid waste facilities;

(D) Timeliness of cease and transfer actions in reducing risk to public health, safety and welfare or the environment;

(E) Remaining life of the existing municipal solid waste facility;

(F) Whether the proposed actions are a cost-effective alternative in accordance with the integrated solid waste management plan approved for the municipal solid waste facility;

(G) Whether the proposed action is reasonable and appropriate for the current and projected volumes of all solid waste for the area served by the facility;

(H) Whether the proposal contains recycling and other forms of waste diversion as a component of the proposed facilities and management practices; and

(J) The likelihood that the cease and transfer actions will reduce or eliminate the threat posed to public health, safety and welfare or the environment by continuing releases.

35-11-531. General permit for cease and closure for small landfills; rulemaking authority.

(a) The department shall develop a general permit in accordance with W.S. 35-11-801(d) for closing municipal solid waste landfills with a total surface area of less than thirty (30) acres, and shall provide assistance to municipalities in the general permitting process. The general permit shall comply with federal requirements for municipal solid waste landfill closure and post-closure.

(b) The department shall provide assistance for permitting municipal solid waste transfer facility activities at closing municipal solid waste landfills with a total surface area of less than thirty (30) acres.

(c) The department shall promulgate rules and regulations necessary to achieve the purposes of this section.

(d) The department shall report to the joint minerals, business and economic development interim committee on or before July 1, 2014 on the assistance provided under subsections (a) and (b) of this section.

35-11-532. Municipal solid waste facility operator financial responsibility; penalties.

(a) Municipal solid waste facility operators shall ensure continued revenue or funding streams sufficient to provide for all foreseeable costs of the facility, including but not limited to the full costs of:

(i) Operations;

(ii) Monitoring;

(iii) Recycling, composting and other diversion activities;

(iv) Closure; and

(v) Post-closure activities.

(b) On or before January 1, 2014 and at least once every four (4) years thereafter, municipal solid waste facility operators shall submit to the department written documentation demonstrating compliance with subsection (a) of this section.

(c) Municipal solid waste facility operators shall employ accounting principles pursuant to the Uniform Municipal Fiscal Procedures Act, W.S. 16-4-101 through 16-4-125, which recognize liabilities associated with:

(i) Closure and post-closure costs; and

(ii) The long-term cost of waste disposal compared to recycling, composting or other diversion activities.

(d) Compliance with this section shall be a prerequisite for eligibility for any state grant and loan program available to a municipal solid waste facility and state funding for solid waste landfill monitoring and remediation.

35-11-533. Municipal solid waste landfill remediation program created; purpose.

(a) There is created the municipal solid waste landfill remediation program. The program shall be administered by the solid and hazardous waste division of the department of environmental quality with the input of the waste and water advisory board as provided in W.S. 35-11-533 through 35-11-537.

(b) The legislature recognizes the threat to the public health, safety, welfare and the environment caused by pollution to soil and water from leaking municipal solid waste landfills. The purpose of this program is to take state primacy of the municipal solid waste landfill remediation program and to provide funding to take remediation actions at eligible leaking municipal solid waste landfills.

35-11-534. Program criteria; requirements for local operator.

(a) The department shall contract with entities, including contractors and local operators, to provide monitoring and remediation activities, including but not limited to groundwater remediation and monitoring, methane mitigation and monitoring and landfill capping, at eligible leaking municipal solid waste landfills. The department shall oversee and fund up to seventy-five percent (75%) of the cost of the investigation of contamination, the design and installation of monitoring and remediation systems and the operation and maintenance of monitoring and remediation systems for up to ten (10) years. The department may operate and maintain a system for a longer period of time in consideration of site specific circumstances. The period of time during which the department shall have responsibility for the monitoring and remediation activities at a leaking municipal solid waste landfill shall be communicated to the local operator prior to installation of the monitoring and remediation systems.

(b) The department shall contract for monitoring and remediation activities under the program at leaking municipal solid waste landfills based upon the priority list of landfills

developed pursuant to W.S. 35-11-524 and other factors as provided in W.S. 35-11-536(a)(iv). The department shall update the priority list of leaking landfills requiring monitoring and remediation activities periodically as conditions warrant and may consider all relevant factors when developing and updating the priority list.

(c) To be eligible for enrollment under the program, the local operators of a leaking municipal solid waste landfill shall:

(i) Enter into a written agreement with the department to meet all regulatory obligations under the program;

(ii) Implement and revise the community's solid waste management plan as necessary to comply with all regulatory obligations;

(iii) Cease disposal of all waste streams at a leaking closed facility or the leaking portion of an operating facility which is undergoing remediation activities pursuant to department rules and regulations and the written agreement between the department and the local operator;

(iv) Cease disposal into units and facilities regulated under this article which do not have engineered containment systems or do not conform to performance based design standards;

(v) Agree to provide funding from any available funding source for at least twenty-five percent (25%) of the total costs of monitoring and remediation under the program;

(vi) Control the source of releases of pollution so as to reduce or eliminate further releases from the leaking municipal solid waste landfill;

(vii) Ensure continued revenue or funding streams sufficient to provide for all foreseeable costs of solid waste facilities under the control of the local operator or political subdivision, including but not limited to the full costs of:

(A) Operations;

(B) Monitoring;

(C) Recycling, composting and other diversion activities;

(D) Closure; and

(E) Post-closure activities.

(viii) Employ accounting principles in managing all solid waste facilities under the control of the local operator or political subdivision, pursuant to the Uniform Municipal Fiscal Procedures Act, W.S. 16-4-101 through 16-4-125, which recognize liabilities associated with:

(A) Closure and post-closure costs; and

(B) The long-term cost of waste disposal compared to recycling, composting or other diversion activities.

(d) In carrying out monitoring and remediation activities under the program the department has the right to construct and maintain any structure, monitor well, recovery system or any other reasonable and necessary item associated with taking remediation and monitoring actions.

(e) The department shall notify the affected public of all confirmed releases requiring a plan for remediation, and upon request, provide or make available to the interested public information concerning the nature of the release and the remediation actions planned or taken.

(f) The department shall delegate and authorize a local operator to conduct or oversee monitoring and remediation under the program pursuant to a written agreement between the department and the local operator acknowledging that the local operator shall adhere to all regulatory requirements of the program in conducting monitoring and remediation activities. The department shall approve the local operator's monitoring and remediation plan prior to authorizing the local operator to conduct or oversee the monitoring and remediation program. The department shall take all actions necessary to ensure that a local operator granted authority to conduct or oversee monitoring and remediation activities under this subsection complies with all regulatory requirements of the program.

35-11-535. Municipal solid waste landfill remediation account; authorized expenditures from the account.

(a) There is created the municipal solid waste landfill remediation account. The department shall use monies from the municipal solid waste landfill remediation account as appropriated by the legislature for the administration of the program. Interest earned by this account shall be deposited in the general fund. Notwithstanding W.S. 9-2-1008, 9-2-1012(e) and 9-4-207(a), funds deposited in this account shall not revert without further action of the legislature.

(b) For a leaking municipal solid waste landfill to be eligible for use of monies in the account, the owner or operator of the site shall comply with all requirements of the program and regulations of the council adopted pursuant to W.S. 35-11-536.

(c) In addition to expenditures from the account authorized by W.S. 35-11-534(a), the department shall issue a credit in an amount not to exceed the local operator's twenty-five percent (25%) share required by W.S. 35-11-534(c)(v) of the total cost of eligible remediation and monitoring activities provided in W.S. 35-11-534(a), for past remediation and monitoring expenses incurred by the local operator as specified in this subsection. The department shall issue credits under this subsection for costs incurred by a local operator for remediation and monitoring activities from the account if:

(i) A work plan for the remediation and monitoring activities was submitted to and approved by the department;

(ii) The remediation and monitoring activities were initiated after July 1, 2006;

(iii) The local operator of a municipal solid waste landfill provides the department with an accurate accounting of the costs of remediation and monitoring activities conducted at the municipal solid waste landfill after July 1, 2006 and the department determines that those remediation and monitoring activities would be eligible for funding if they had been performed under the program;

(iv) The local operator conducts additional remediation and monitoring activities at the leaking municipal solid waste landfill which are eligible for funding under W.S. 35-11-534(a) on or after July 1, 2013; and

(v) A credit issued under this subsection shall not exceed an amount equal to seventy-five percent (75%) of the cost incurred by the local operator for eligible remediation and monitoring activities after July 1, 2006.

(d) Repealed by Laws 2015, ch. 47, § 2.

35-11-536. Rules and regulations.

(a) The council shall promulgate rules and regulations necessary to administer the program after recommendation from the director of the department, the administrator of the solid and hazardous waste division and the water and waste advisory board. The rules shall include but shall not be limited to rules and regulations which:

(i) Provide for landfill monitoring and remediation system design, construction, installation and monitoring standards which shall be no less stringent than federal requirements;

(ii) Specify the requirements for delegating installation or modification inspection authority including but not limited to requirements for contractors and local operators;

(iii) Establish a procedure or procedures for reporting any release from a municipal solid waste landfill;

(iv) Include provisions under which priorities for remediation actions shall be established in addition to the priority list created pursuant to W.S. 35-11-524. Those priorities shall be established considering, but not limited to, the following factors:

(A) Funding availability;

(B) Cost efficiencies achieved by allocation of resources;

(C) Opportunities for increased cost sharing between monitoring and remediation actions at multiple leaking municipal solid waste landfills;

(D) Timeliness of remediation in reducing risk to public health, safety and welfare or the environment;

(E) The likelihood that the remedy will reduce or eliminate the threat posed to public health, safety and welfare or the environment by continuing releases; and

(F) Whether the facility has completed closure and transfer actions at the leaking municipal solid waste facility. Priority shall be given to solid waste facilities which have completed closure and transfer actions.

(v) Require records for compliance with repairs and upgrades to be maintained for the operational life of the landfill remediation and monitoring system;

(vi) Create requirements for participation in the program and for the return of the facility to local control pursuant to W.S. 35-11-534(a); and

(vii) Specify standards for restoration of the environment.

35-11-537. Restoration standard.

Any owner or operator, the department or other person taking a corrective action shall restore the environment to a condition and quality consistent with standards established in rules and regulations.

ARTICLE 6
VARIANCES

35-11-601. Applications; authority to grant; hearing; limitations; renewals; judicial review; emergencies.

(a) Any person who owns or is in control of any real or personal property, any plant, building, structure, process or equipment may apply to the administrator of the appropriate division for a variance from any rule, regulation, standard or permit promulgated under this act. A variance may be granted upon notice and hearing. The administrator shall give public notice of the request for a variance in the county in which such real or personal property, plant, building, structure, process or equipment is in existence for which the variance is sought. The notice shall designate who has applied for the variance and the nature of the variance requested and the time and place of hearing and shall be published in a newspaper of general circulation in said county once a week for four (4) consecutive weeks prior to the date of the hearing. The cost of publication

shall be paid by the person applying for the variance. The administrator of the division shall promptly investigate the request, consider the views of the persons who may be affected by the grant of the variance, and all facts bearing on the request, and make a decision with the approval of the director within sixty (60) days from the date the hearing for a variance is held.

(b) If the variance is granted on the ground that there is no practicable means known or available for the adequate prevention, abatement or control of the pollution, or mining operation involved, it shall continue in effect only until the necessary means for prevention, abatement or control become known and available, and subject to the taking of any substitute or alternate measures that the director may prescribe.

(c) If the variance is granted on the ground that compliance with the particular requirement or requirements from which variance is sought will necessitate the taking of measures which, because of their extent or cost, must be spread over a considerable period of time, it shall be for a period not to exceed such reasonable time as, in the view of the director is requisite for the taking of the necessary measures. A variance granted on the ground specified herein shall contain a timetable for the taking of action in an expeditious manner and shall be conditioned on adherence to such timetable.

(d) A variance may be granted by the council from standards established by the council for sulfur oxide emissions, if the council determines that the state of the technology for removal of sulfur oxides from the stack gasses is insufficiently advanced to achieve the objective level without causing undue economic hardship on the owner of the facility or the consumer of the product produced by the facility or if the council determines that the developing technology offers promise that superior equipment might, in the near future, be available which would render presently available equipment obsolete and that the best interests of the state would be served by the issuance of the variance. In considering such a variance, the council must consider the health and well being of the citizens in the vicinity of the facility and the effect upon livestock and agricultural production in the area. In no event shall the variance permit emissions less stringent than existing federal standards covering the emission of sulfur oxides. Each application for a variance will be issued on a case by case basis considering the state of the technology at the time of each application.

(e) If the variance is granted on the ground that it is justified to relieve or prevent hardship of a kind other than that provided for in subsections (b), (c) and (d) of this section, it shall be for not more than one (1) year.

(f) Any variance granted pursuant to this section may be renewed on terms and conditions and for periods which would be appropriate on initial granting of a variance. If complaint by an aggrieved party is made to the director on account of the variance, no renewal thereof shall be granted, unless following public hearing on the complaint on due notice, the council finds that renewal is justified. No renewal shall be granted except on application therefor. Any such application shall be made at least sixty (60) days prior to the expiration of the variance.

(g) Any variance or renewal thereof granted by the director pursuant to this section shall become final unless within thirty (30) days after date of notice as provided in subsection (a) of this section an aggrieved party as defined by this act in writing may request a hearing before the council. Upon the filing of such a request for a hearing, the variance shall be stayed pending the council's final determination thereon.

(h) If, after a hearing held pursuant to this section, the council finds that a variance is required, it shall affirm or modify the order previously issued by the director or issue an appropriate order for variance as it deems necessary. If, after a hearing held pursuant to this section, the council finds that there is no need for a variance, it shall rescind the issuance of a variance.

(j) In connection with any hearing held pursuant to this section, the council has the power and upon application by any aggrieved party, it has the duty to compel the attendance of witnesses, and the production of evidence on behalf of all parties.

(k) Any aggrieved party adversely affected by a variance or renewal of same or the denial of same may obtain judicial review thereof in the manner prescribed by the Wyoming Administrative Procedure Act.

(m) Failure to comply with the conditions imposed by any variance shall be cause for modification or termination of the variance by the director.

(n) Nothing in this section and no variance or renewal granted pursuant hereto shall be construed to prevent or limit the application of the emergency provisions and procedures of W.S. 35-11-115 to any person or property.

(o) Nothing in this section shall be construed to permit an application for a water variance. The application for water permits must be made solely under the provisions of W.S. 35-11-302.

(p) Nothing in this act or regulations under this act shall be construed to permit an application for a variance which would result in less stringent land use or environmental controls or regulations of surface coal mining and reclamation operations than authorized by P.L. 95-87, as that law is worded on August 3, 1977, or the federal regulations promulgated pursuant thereto.

(q) In order to encourage advances in mining and reclamation practices or to allow post-mining land use for industrial, commercial, residential or public use (including recreational facilities), the director, with approval by the secretary of the interior, may authorize departures in individual cases on an experimental basis from the environmental protection performance standards promulgated by the council under this act. Such departures may be authorized if:

(i) The experimental practices are potentially more or at least as environmentally protective, during and after mining operations, as those required by promulgated standards;

(ii) The mining operations approved for particular land-use or other purposes are not larger or more numerous than necessary to determine the effectiveness and economic feasibility of the experimental practices; and

(iii) The experimental practices do not reduce the protection afforded public health and safety below that provided by promulgated standards.

(r) The secretary of interior, acting through the office of surface mining reclamation and enforcement, shall assist the state in the development of a state program for surface coal mining and reclamation operations which meet the requirements of this act and P.L. 95-87, and at the same time, reflect local

requirements and local environmental and agricultural conditions.

ARTICLE 7
COMPLAINTS

35-11-701. Complaint; investigations; conference; cease and desist order; hearing; referee.

(a) If the director or the administrators have cause to believe that any persons are violating any provision of this act or any rule, regulation, standard, permit, license, or variance issued pursuant hereto, or in case any written complaint is filed with the department alleging a violation, the director, through the appropriate administrator, shall cause a prompt investigation to be made.

(b) For surface coal mining operations, in the instance of a written complaint by any person which provides a reasonable basis to believe that a violation of article 4 of this act, or of any rule, regulation, standard, order, license, variance or permit issued thereunder, exists, the investigation shall include a prompt inspection. In such event the director shall notify the person when the inspection is proposed to be carried out and the person shall be allowed to accompany the inspector during the inspection, subject to reasonable control by the inspector. The operator shall have a duty to exercise reasonable care for the person's safety only if his presence is known. However, this duty shall not include the duty to inspect the premises to discover dangers which are unknown to the operator, nor giving warning or protection against conditions which are known or should be obvious to the person. The operator or his designee shall be allowed to be present for any such inspection.

(c) For other than those violations specified under subsection (b) of this section, if, as a result of the investigation, it appears that a violation exists, the administrator of the proper division may, by conference, conciliation and persuasion, endeavor promptly to eliminate the source or cause of the violation:

(i) In case of failure to correct or remedy an alleged violation, the director shall cause to be issued and served upon the person alleged to be responsible for any such violation a written notice which shall specify the provision of this act, rule, regulation, standard, permit, license, or

variance alleged to be violated and the facts alleged to constitute a violation thereof, and may require the person so complained against to cease and desist from the violation within the time the director may determine;

(ii) Any order is final unless, not later than ten (10) days after the date the notice is served, the person or persons named therein request, in writing, a hearing before the council. Upon the filing of a request the order complained of shall be stayed pending the council's final determination thereon;

(iii) If after a hearing held pursuant to this section, the council finds that a violation has occurred, it shall affirm or modify such order previously issued, or issue an appropriate order or orders for the prevention, abatement or control of the violation involved or for the taking of other corrective action. If, after a hearing on an order contained in a notice, the council finds that no violation has occurred, it shall rescind the order. Any order issued as part of a notice or after hearing may prescribe the date or dates by which the violation shall cease and may prescribe timetables for action. Nothing contained in this subsection shall be construed as preventing any person from applying for a variance as provided in W.S. 35-11-601;

(iv) At any hearing before the council, it may designate a person to be a referee and may authorize the referee to receive evidence, administer oaths, examine witnesses and issue subpoenas requiring the testimony of witnesses and the production of evidence and to make reports and recommendations with respect thereto. Any final determination based on the evidence received by any referee shall be made solely by the council.

(d) Nothing in this section shall be interpreted to in any way limit or contravene any other remedy available under this act, nor shall this section be interpreted as a condition precedent to any other enforcement action under this act.

ARTICLE 8
PERMITS

35-11-801. Issuance of permits and licenses.

(a) When the department has, by rule or regulation, required a permit to be obtained it is the duty of the director

to issue such permits upon proof by the applicant that the procedures of this act and the rules and regulations promulgated hereunder have been complied with. In granting permits, the director may impose such conditions as may be necessary to accomplish the purpose of this act which are not inconsistent with the existing rules, regulations and standards. An administrator shall not issue permits and may issue a license under this act only as specifically authorized in this act.

(b) Except as otherwise provided in this act the director shall take final action on any application for permit or extension thereof within sixty (60) days after receipt of same unless public notice or hearing is required by state or federal statute.

(c) Except as provided in subsection (e) of this section, a permit to construct is required before construction or modification of any industrial facility capable of causing or increasing air or water pollution in excess of standards established by the department is commenced.

(d) General permits shall be issued solely in accordance with procedures set forth by regulation adopted by the council. Procedures for the issuances of general permits shall include public notice and an opportunity for comment. All department authorizations to use general permits under this section shall be available for public comment for thirty (30) days. Any aggrieved party may appeal the authorization as provided in this act.

(e) Except for sources required to have a permit before construction or modification under the applicable requirements of W.S. 35-11-203 and sources specified by the director, if an applicant for an air quality permit for an oil or gas exploration or production well, with its associated equipment, has submitted a timely and complete application for a permit to construct or modify within ninety (90) days of the first date of production of the oil and gas operation, the applicant's failure to have a permit shall not be a violation of this section. An applicant complies with this section if the applicant demonstrates to the administrator of the air quality division that the oil and gas exploration or production activity qualifies as a nonmajor source. The application shall contain, at a minimum, a demonstration that the applicant will apply the best available control technology to the oil and gas production and exploration activity.

(f) As used in subsection (e) of this section, "first date of production" means the date permanent production equipment is in place and product is consistently flowing to sales lines, gathering lines or storage tanks. Production occurring during well completion activities which is routed to temporary production equipment is considered to occur prior to the first date of production. If extended periods of time pass between zone completions but production from initially completed zones is consistently flowing to permanent production equipment, the first date of production is the date when production from the initial zones began consistently flowing to the permanent production equipment, even though more zones will be completed later.

35-11-802. Refusal to grant permits; applicant's rights.

If the director refuses to grant any permit under this act, the applicant may petition for a hearing before the council to contest the decision. The council shall give a public notice of such hearing. At such hearing, the director and appropriate administrator shall appear as respondent and the rules of practice and procedure adopted by the council pursuant to this act and the Wyoming Administrative Procedure Act shall apply. The burden of proof shall be upon the petitioner. The council must take final action on any such hearing within thirty (30) days from date of hearing.

35-11-803. Single permit for activities covered by more than one article.

(a) The director may grant a single permit for a facility or activity regulated under more than one (1) article of this act provided that there is compliance with all rules, standards and public participation requirements provided by the individual articles of this act.

(b) The council may adopt unified rules which encompass activities covered by more than one (1) article of this act.

ARTICLE 9
PENALTIES

35-11-901. Violations of provisions; penalties.

(a) Any person who violates, or any director, officer or agent of a corporate permittee who willfully and knowingly authorizes, orders or carries out the violation of any provision

of this act, or any rule, regulation, standard or permit adopted hereunder or who violates any determination or order of the council pursuant to this act or any rule, regulation, standard, permit, license or variance is subject to a penalty not to exceed ten thousand dollars ($10,000.00) for each violation for each day during which violation continues, a temporary or permanent injunction, or both a penalty and an injunction subject to the following:

(i) Except that any person who violates any provision of article 2 of this chapter or any provision of the state hazardous waste program authorized pursuant to the Resource Conservation Recovery Act, Subtitle C, 42 U.S.C. § 6901 [6921] et seq., as amended, or any rule, regulation, standard or permit adopted pursuant to those provisions, or who violates any determination or order of the council pursuant to article 2 of this chapter or the state hazardous waste program is subject to a penalty not to exceed ten thousand dollars ($10,000.00) for each violation for each day during which the violation continues, a temporary or permanent injunction, or both a penalty and an injunction; and

(ii) Penalties and injunctive relief under this subsection are to be determined by a court of competent jurisdiction in a civil action, provided that nothing herein shall preclude the department from negotiating stipulated settlements involving the payment of a penalty, implementation of compliance schedules or other settlement conditions in lieu of litigation.

(b) Repealed by Laws 1995, ch. 28, § 4.

(c) Repealed by Laws 1995, ch. 28, § 4.

(d) Repealed by Laws 1995, ch. 28, § 4.

(e) Repealed by Laws 1995, ch. 28, § 4.

(f) Repealed by Laws 1995, ch. 28, § 4.

(g) Repealed by Laws 1995, ch. 28, § 4.

(h) Repealed by Laws 1995, ch. 28, § 4.

(j) Any person who willfully and knowingly violates, or any director, officer or agent of a corporate permittee who willfully and knowingly authorizes, orders or carries out the

violation of any provision of this act or any rule, regulation, standard, permit, license, or variance or limitations adopted hereunder or who willfully violates any determination or order of the council or court issued pursuant to this act or any rule, regulation, standard, permit or limitation issued under this act shall be fined not more than twenty-five thousand dollars ($25,000.00) per day of violation, or imprisoned for not more than one (1) year, or both. For a subsequent conviction for a violation of this act, the person shall be subject to a fine of not more than fifty thousand dollars ($50,000.00) per day of violation, imprisonment for not more than two (2) years, or both. For multiple violations, penalties may be assessed up to the maximum amount specified in this subsection for each day of each separate violation.

(k) Any person who knowingly makes any false statement, representation or certification in any application, record, report, plan or other document filed or required to be maintained under this act or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this act, shall upon conviction, be fined not more than ten thousand dollars ($10,000.00) per day for each violation or imprisoned for not more than one (1) year, or both.

(m) Repealed by Laws 1995, ch. 28, § 4.

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35-11-902. Surface coal mining operations; violations of provisions; penalties.

(a) Notwithstanding W.S. 35-11-901, violations by surface coal mining operations of article 4 of this act, or of any rule, regulation, standard, order, license, variance or permit issued thereunder, shall be governed by this section.

(b) Any person who violates, or any director, officer or agent of a corporate permittee who willfully and knowingly authorizes, orders or carries out the violation of any provision of article 4 of this act for surface coal mining operations, or

any rule, regulation, standard, license, variance or permit issued thereunder, or who violates any determination or order of the council pursuant to article 4 of this act for surface coal mining operations is subject to either a penalty not to exceed ten thousand dollars ($10,000.00) for each day during which a violation continues, or, for multiple violations, a penalty not to exceed five thousand dollars ($5,000.00) for each violation for each day during which a violation continues, a temporary or permanent injunction, or both a penalty and an injunction. Penalties and injunctive relief under this subsection may be recovered in a civil action.

(c) All notices for abatement and cessation orders shall be reported to the director. The director shall:

(i) Issue a notice of assessment, if a cessation order was issued;

(ii) Make a determination as to whether a notice of assessment will be issued if a notice for abatement was issued.

(d) Upon issuance of a notice of abatement or cessation order, the director shall inform the operator of the proposed amount of the penalty within thirty (30) days. The amount shall be determined in accordance with rules and regulations promulgated by the council. The person charged with the penalty shall have fifteen (15) days to request a conference with the director for informal disposition of any dispute over either the amount of the penalty or the occurrence of the violation.

(e) If a conference is held and after the director has determined that a violation did occur and the amount of the penalty is warranted, the person charged with the penalty shall, within fifteen (15) days, either:

(i) Pay the proposed penalty in full; or

(ii) Petition the council for review of either the amount of the penalty or the fact of the violation, submitting a bond equal to the proposed amount of the penalty at the time of filing the petition. The bond shall be conditioned for the satisfaction of the penalty in full, or as modified by the council, if the director's determination as to the occurrence of the violation and the assessment of a penalty is affirmed. The petition is effective when the bond is approved by the council. If the bond is not approved, the person charged with the penalty has ten (10) days to forward the proposed amount to the council

for placement in an escrow account to make the petition effective.

(f) If a conference is not requested, the person charged with the penalty has thirty (30) days to take the action required under subsection (d) of this section.

(g) After a petition is effective, the council shall hold a hearing, which shall be conducted as a contested case proceeding under the Wyoming Administrative Procedure Act. The council shall either:

(i) Determine the occurrence of the violation and the amount of penalty which is warranted for the purpose of ordering that the penalty be paid; or

(ii) Determine that no violation occurred, or that the amount of the penalty shall be reduced. If such a determination is made, either through administrative or judicial review, the director shall within thirty (30) days remit the appropriate amount to the person, if any deposit has been made, with interest at the rate of six percent (6%), or at the prevailing United States department of treasury rate, whichever is greater. Failure to file an effective petition shall result in a waiver of all legal rights to contest the violation or the amount of the penalty.

(h) Any person aggrieved or adversely affected in fact by a final decision of the council pursuant to this section is entitled to judicial review in accordance with the Wyoming Administrative Procedure Act.

(j) Any person who willfully and knowingly violates, or any director, officer or agent of a corporate permittee who willfully and knowingly authorizes, orders or carries out the violation of any provision of article 4 of this act with respect to surface coal mining, or any rule, regulation, standard, permit, license, or variance or limitations adopted thereunder, or who willfully violates any determination or order of the council or court issued pursuant to this section, shall be fined not more than twenty-five thousand dollars ($25,000.00) per day of violation, imprisoned for not more than one (1) year, or both. For a subsequent conviction for a violation of article 4 of this act with respect to surface coal mining, the person shall be subject to a fine of not more than fifty thousand dollars ($50,000.00) per day of violation, imprisonment for not more than two (2) years, or both. For multiple violations,

penalties may be assessed up to the maximum amount specified in this subsection for each day of each separate violation.

(k) Any person who knowingly makes any false statement, representation or certification in any application, record, report, plan or other document filed or required to be maintained under article 4 of this act for surface coal mining operations, or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under article 4 of this act for surface coal mining operations shall, upon conviction be subject to a fine of not more than ten thousand dollars ($10,000.00), imprisonment for not more than one (1) year, or both.

(m) Any person who shall, except as permitted by law, willfully resist, prevent, impede or interfere with the director, any administrator or any of their agents in the performance of their duties in the regulation of surface coal mining operations under article 4 of this act shall be subject to a fine of not more than five thousand dollars ($5,000.00), imprisonment for not more than one (1) year, or both.

(n) Any operator of a surface coal mining operation who fails to correct a violation within the period permitted for its correction, or after a final order or decision issues requiring correction when either the department or a court has relieved the operator from the abatement requirements of the notice or order, shall be assessed a civil penalty of not less than seven hundred fifty dollars ($750.00) for each day during which the failure or violation continues.

(o) Any person who is injured in his person or property through the violation, by any operator, of any rule, regulation, order or permit issued pursuant to article 4 of this act as it provides for the regulation of surface coal mining and reclamation in accordance with the requirements of P.L. 95-87 may bring an action for damages, including reasonable attorney and expert witness fees, only in the judicial district in which the surface coal mining operation complained of is located.

35-11-903. Violations of provisions of act causing damage to wildlife; recoveries; causes of action.

(a) Any person who violates this act, or any rule or regulation promulgated thereunder, and thereby causes the death of fish, aquatic life or game or bird life is, in addition to other penalties provided by this act, liable to pay to the

state, an additional sum for the reasonable value of the fish, aquatic life, game or bird life destroyed. Any monies so recovered shall be placed in the game and fish fund.

(b) Except as provided in W.S. 35-11-902(o), nothing in this act shall be construed to abridge, limit, impair, create, enlarge or otherwise affect substantively or procedurally the right of any person to damages or other relief on account of injury to persons or property and to maintain any action or other appropriate proceeding therefor.

(c) All actions pursuant to this article, except actions under W.S. 35-11-902(o), shall be brought in the county in which the violation occurred or in Laramie county by the attorney general in the name of the people of Wyoming. All actions pursuant to this article for the enforcement of any program to administer the provisions of W.S. 35-11-301(a)(iii) and (v) pursuant to the authority delegated under W.S. 35-11-304 may also be brought by the county attorney in the county in which the violation occurred.

35-11-904. Civil or criminal remedy.

(a) Except as provided in subsection (c) of this section, any person having an interest which is or may be adversely affected, may commence a civil action on his own behalf to compel compliance with this act only to the extent that such action could have been brought in federal district court under Section 520 of P.L. 95-87, as that law is worded on August 3, 1977:

(i) Against any governmental entity, for alleged violations of any provisions of this act or of any rule, regulation, order or permit issued pursuant thereto, or against any other person for alleged violations of any rule, regulation, order or permit issued pursuant to this act; or

(ii) Against the state of Wyoming, department of environmental quality, for alleged failure of the department to perform any act or duty under this act which is not discretionary with the department.

(b) Actions against the state of Wyoming, department of environmental quality, pursuant to this section shall be filed in the district court for Laramie county. Actions against any governmental entity, or any other person pursuant to this

section shall be filed in the district court for the county in which the violation is alleged to have occurred.

(c) No action pursuant to this section may be commenced:

(i) Prior to sixty (60) days after the plaintiff has given notice in writing of the violation and of his intent to commence the civil action to the department and the alleged violator, except that such action may be brought immediately after such notification if the violation complained of constitutes an imminent threat to the health or safety of the plaintiff or would immediately affect a legal interest of the plaintiff; or

(ii) If the department, through the attorney general, has commenced a civil action to require compliance with the provisions of this act, or any rule, regulation, order or permit issued pursuant to this act, but in any such action any person may intervene as a matter of right.

(d) The state of Wyoming, department of environmental quality, may intervene as a matter of right in any action filed pursuant to this section.

(e) The court, in issuing any final order in any action brought pursuant to this section, may award costs of litigation, (including attorney and expert witness fees), to any party whenever the court determines such award is appropriate.

(f) The availability of judicial review established pursuant to W.S. 16-3-114 shall not be construed to limit the operation of rights established in this section.

(g) Nothing in this act shall in any way limit any existing civil or criminal remedy for any wrongful action arising out of a violation of any provision of this act or any rule, regulation, standard, permit, license, or variance or order adopted hereunder.

ARTICLE 10
JUDICIAL REVIEWS

35-11-1001. Judicial review; temporary relief; conditions.

(a) Any aggrieved party under this act, any person who filed a complaint on which a hearing was denied, and any person who has been denied a variance or permit under this act, may

obtain judicial review by filing a petition for review within thirty (30) days after entry of the order or other final action complained of pursuant to the provisions of the Wyoming Administrative Procedure Act.

(b) Any person having a legal interest in the mineral rights or any person or corporation having a producing mine or having made substantial capital expenditures and commitments to mine mineral rights with respect to which the state has prohibited mining operations because the mining operations or proposed mining operations would irreparably harm, destroy or materially impair an area that has been designated to be of a unique and irreplaceable historical, archeological, scenic or natural value, may petition the district court for the district in which the mineral rights are located to determine whether the prohibition so restricts the use of the property as to constitute an unconstitutional taking without compensation. Upon a determination that a taking has occurred the value of the investment in the property or interests condemned shall be ascertained and damages shall be assessed as in other condemnation proceedings.

(c) In a proceeding to review any order or decision of the department providing for regulation of surface coal mining and reclamation operations in accordance with P.L. 95-87, the court may under conditions it prescribes grant temporary relief pending final determination of the review proceedings if:

(i) All parties to the proceedings were notified and given opportunity for hearing on the request for temporary relief;

(ii) The party requesting relief shows there is a substantial likelihood he will prevail on the final determination of the proceeding; and

(iii) The relief will not adversely affect the public health and safety or cause significant environmental harm to land, air or water resources.

35-11-1002. Publication of rules and regulations.

Any rule, regulation or standard promulgated under this act shall be published and distributed to members of the legislature and any other interested party.

ARTICLE 11

MISCELLANEOUS PROVISIONS

35-11-1101. Records available to the public; restrictions.

(a) Any records, reports or information obtained under this act or the rules, regulations and standards promulgated hereunder are available to the public. Upon a showing satisfactory to the director by any person that his records, reports or information or particular parts thereof, other than emission and pollution data, to which the director and administrators have access under this act if made public would divulge trade secrets, the director and administrators shall consider the records, reports or information or particular portions thereof confidential in the administration of this act.

(b) Nothing herein shall be construed to prevent disclosure of any records, reports or information to federal, state or local agencies necessary for the purposes of administration of any federal, state or local air, water or land control measures or regulations or when relevant to any proceedings under this act.

(c) In any suit under this section or the Public Records Act, W.S. 16-4-201 et seq., to compel the release of information under this act, the court may assess against the state reasonable attorney fees and other litigation costs reasonably incurred in any case in which the complainant has substantially prevailed and in which the court determines the award is appropriate.

35-11-1102. Hearing unnecessary prior to issuance of emergency order.

Nothing in this act shall be construed to require a hearing prior to the issuance of an emergency order.

35-11-1103. Property exempt from ad valorem taxation.

The following property is exempt from ad valorem taxation pursuant to the provisions of this act and includes facilities, installations, machinery or equipment attached or unattached to real property and designed, installed and utilized primarily for the elimination, control or prevention of air, water or land pollution, or in the event such facility, installation, equipment or machinery shall also serve other beneficial purposes and use, such portion of the assessed valuation thereof as may be reasonably calculated to be necessary for and devoted

to elimination, control or prevention of air, water and land pollution. The department of revenue shall determine the exempt portion on all property assessed pursuant to W.S. 39-13-102(m). The county assessor shall determine the exempt portion on all property assessed pursuant to W.S. 39-13-103(b). The determination shall not include as exempt any portion of any facilities which have value as the specific source of marketable byproducts.

35-11-1104. Limitation of scope of provisions.

(a) Nothing in this act:

(i) Grants to the department or any division thereof any jurisdiction or authority with respect to pollution existing solely within commercial and industrial plants, works or shops;

(ii) Affects the relations between employers and employees with respect to or arising out of any condition of pollution;

(iii) Limits or interferes with the jurisdiction, duties or authority of the state engineer, the state board of control, the director of the Wyoming game and fish department, the state mine inspector, the oil and gas supervisor or the oil and gas conservation commission, or the occupational health and safety commission.

35-11-1105. Environmental audit privilege; exceptions; burden of proof; waiver; disclosure after in camera review; application.

(a) As used in this section:

(i) "Environmental audit" means a voluntary, internal and comprehensive evaluation of one (1) or more facilities or an activity at one (1) or more facilities regulated under this act, or of management systems related to the facility or activity, that is designed to identify and prevent noncompliance and to improve compliance with this act. An environmental audit may be conducted by the owner or operator, by the owner's or operator's employees or by independent contractors. Once initiated the voluntary environmental audit shall be completed within one hundred eighty (180) days. Nothing in this section shall be construed to authorize uninterrupted voluntary environmental audits;

(ii) "Environmental audit report" means a set of documents, each labeled "Environmental Audit Report: Privileged Document," prepared as a result of an environmental audit and may include field notes and records of observations, findings, opinions, suggestions, conclusions, drafts, memoranda, drawings, photographs, computer-generated or electronically recorded information, maps, charts, graphs and surveys if supporting information is generated or developed for the primary purpose and in the course of an environmental audit. An environmental audit report, when completed, shall have three (3) components:

(A) An audit report prepared by the auditor, including the scope, commencement and completion dates of the audit, the information gained in the audit, conclusions and recommendations, together with exhibits and appendices;

(B) Memoranda and documents analyzing the audit report and discussing implementation issues; and

(C) An audit implementation plan that corrects past noncompliance, improves current compliance and prevents future noncompliance.

(iii) "In camera review" means a hearing or review in a courtroom, hearing room or chambers to which the general public is not admitted. However, all parties to a civil or administrative proceeding may attend an in camera hearing and shall have a reasonable opportunity to review the documents for which the privilege is claimed and challenge the application of privilege to an environmental audit report. After such hearing or review, the content of oral and other evidence and statements of the judge, counsel and all parties shall be held in confidence by those participating in or present at the hearing or review, and any transcript of the hearing or review shall be sealed and not considered a public record until its contents are disclosed, pursuant to this section, by a court having jurisdiction over the matter.

(b) Owners and operators of facilities and persons whose activities are regulated under this act may conduct a voluntary internal environmental audit of compliance programs and management systems to assess and improve compliance with this act. An environmental audit privilege is created to protect the confidentiality of communications relating to these audits.

(c) An environmental audit report is privileged and shall not be admissible as evidence in any civil or administrative proceeding, except as follows:

(i) The owner or operator of a facility may waive this privilege in whole or in part. If an owner or operator of a facility or person conducting an activity seeks to introduce any part of an environmental audit report as evidence in any proceeding, including reporting of violations under W.S. 35-11-1106(a), the privilege is waived as to those sections of the report dealing with that media sought to be introduced into evidence;

(ii) In a civil or administrative proceeding, the court or hearing officer after in camera review consistent with the Wyoming Rules of Civil Procedure, shall require disclosure of all or part of the report if it determines:

(A) The privilege is asserted for a fraudulent purpose;

(B) The material is not subject to the privilege;

(C) The material shows evidence of noncompliance with this act or any federal environmental law or regulation and appropriate efforts to achieve compliance were not pursued as promptly as circumstances permit and completed with reasonable diligence; or

(D) The information contained in the environmental audit report demonstrates a substantial threat to the public health or environment or damage to real property or tangible personal property in areas outside of the facility property.

(iii) Repealed By Laws 1998, ch. 80, § 2.

(iv) A party asserting the privilege granted under this section has the burden of proving the privilege, including proof that appropriate efforts to achieve compliance with this act or any federal environmental law or regulation were promptly pursued and completed with reasonable diligence. A party seeking disclosure under subparagraph (c)(ii)(A) of this section has the burden of proving that the privilege is asserted for a fraudulent purpose;

(v) Repealed By Laws 1998, ch. 80, § 2.

(vi) Repealed By Laws 1998, ch. 80, § 2.

(vii) Repealed By Laws 1998, ch. 80, § 2.

(viii) The parties may at any time stipulate to entry of an order directing whether specific information contained in an environmental audit report is subject to the privilege provided under this section;

(ix) Upon making a determination under paragraph (c)(ii) of this section, the court shall compel disclosure of those portions of an environmental audit report relevant to issues in dispute in the proceeding.

(d) The privilege described in this section shall not extend to:

(i) Documents, communications, data, reports or other information required to be collected, developed, maintained, reported or otherwise made available to a regulatory agency or to any person pursuant to any regulatory requirement of this act or any other federal or state law or regulation;

(ii) Information obtained by observation, sampling or monitoring by any regulatory agency;

(iii) Information obtained from a source independent of the environmental audit;

(iv) Documents existing prior to the commencement of the environmental audit; or

(v) Documents prepared subsequent to and independent of the completion of the environmental audit.

(e) Nothing in this section shall limit, waive or abrogate the scope or nature of any statutory or common law privilege, including the work product doctrine and the attorney-client privilege.

35-11-1106. Limitation on civil penalties; voluntary reports of violations.

(a) If an owner or operator of a facility regulated under this act voluntarily reports to the department a violation

disclosed by the audit conducted under W.S. 35-11-1105 within sixty (60) days of the completion date of the audit, the department shall not seek civil penalties or injunctive relief for the violation reported unless:

(i) The facility is under investigation for any violation of this act at the time the violation is reported;

(ii) The owner or operator does not take action to eliminate the violation within the time frame specified in an order affirmed by the council or otherwise made final pursuant to W.S. 35-11-701(c)(ii);

(iii) The violation is the result of gross negligence or recklessness; or

(iv) The department has assumed primacy over a federally delegated environmental law and a waiver of penalty authority would result in a state program less stringent than the federal program or the waiver would violate any federal rule or regulation required to maintain state primacy. If a federally delegated program requires the imposition of a penalty for a violation, the voluntary disclosure of the violation shall to the extent allowed under federal law or regulation, be considered a mitigating factor in determining the penalty amount.

(b) Reporting a violation is mandatory if required by this act, any departmental rule or regulation, federal law or regulation, local ordinance or resolution, any order of the council or by any court and is therefore not voluntary under this section.

(c) Notwithstanding subsection (a) of this section, injunctive relief may be sought under W.S. 35-11-115.

(d) The elimination of administrative or civil penalties under this section does not apply if a person or entity has been found by a court to have committed serious violations that constitute a pattern of continuous or repeated violations of environmental laws, rules, regulations, permit conditions, settlement agreements or orders on consent and that were due to separate and distinct events giving rise to the violations, within the three (3) year period prior to the date of the disclosure. A pattern of continuous or repeated violations may also be demonstrated by multiple settlement agreements related to substantially the same alleged violations concerning serious

instances of noncompliance with environmental laws that occurred within the three (3) year period immediately prior to the date of the voluntary disclosure.

ARTICLE 12
ABANDONED MINE RECLAMATION PROGRAM

35-11-1201. Abandoned mine reclamation program.

In addition to any other powers and duties imposed by law, the governor, through the director shall perform any and all acts necessary or expedient to implement and administer an abandoned mine reclamation program pursuant to section 405 of P.L. 95-87 in accordance with an approved state reclamation plan and annual approved applications for implementation of specific reclamation projects.

35-11-1202. State reclamation plan.

(a) The state reclamation plan may provide for any or all of the following activities:

(i) The acquisition, reclamation or restoration of land and water resources which were mined for coal or minerals or affected by coal or other mineral mining processes and left or abandoned in an unreclaimed or inadequately reclaimed condition prior to August 3, 1977, and for which there is no continuing reclamation responsibility under state or federal statutes. The effective date for the purpose of determining eligibility on federal lands managed by the forest service shall be August 28, 1974, and the effective date for determining eligibility on federal lands managed by the bureau of land management shall be November 26, 1980. Any of the activities under this paragraph shall reflect the following priorities in the order stated:

(A) The protection of public health, safety, general welfare and property from extreme danger of adverse effects of mining and processing practices;

(B) The protection of public health, safety and general welfare from adverse effects of mining and processing practices;

(C) The restoration of land and water resources and the environment previously degraded by the adverse effects of coal and mineral mining and processing practices.

(D) Repealed by Laws 1991, ch. 72, § 2.

(E) Repealed by Laws 1991, ch. 72, § 2.

(F) Repealed by Laws 1991, ch. 72, § 2.

(ii) Repealed by Laws 1991, ch. 72, § 2.

(iii) The acquisition, reclamation and transfer of land to the state or to a political subdivision thereof, or to any person after a determination by the governor that such is an integral and necessary element of an economically feasible plan for a project to construct or rehabilitate housing for persons disabled as the result of employment in the mines or work incidental thereto, persons displaced by acquisition of land pursuant to this article, persons dislocated as a result of adverse effects of coal mining practices which constitute an emergency, or persons dislocated as the result of natural disasters or catastrophic failures from any cause. However, no part of the abandoned mine reclamation funds may be used to pay the actual construction costs of housing;

(iv) Repealed by Laws 1991, ch. 72, § 2.

(v) Reclamation projects involving the protection, repair, replacement, construction or enhancement of utilities, such as those relating to water supply, roads and other facilities serving the public adversely affected by coal and mineral mining and processing practices. The construction and maintenance of public facilities in communities impacted by coal or mineral mining and processing practices is deemed to be included within the objectives established for the abandoned mine reclamation program, and shall be undertaken in accordance with the priorities stated in paragraph (i) of this subsection.

(b) The state reclamation plan shall be developed by the governor, after recommendation from the director. The director after consulting the administrator of the abandoned land mine division shall make this recommendation only after he has prepared a proposed plan and afforded, at a minimum, an opportunity for the public to inspect and comment on this proposed plan in each county having land and water resources which qualify for acquisition, reclamation or restoration under subsection (a) of this section. All comments shall be recorded and considered in the development of the plan.

(c) Notwithstanding subsection (a) of this section, the governor may request abandoned mine land funds be appropriated for the construction of specific public facilities related to the coal or mineral industries or for other activities related to the impacts of these industries.

35-11-1203. Abandoned mine reclamation account; subsidence mitigation account.

(a) Upon approval of the state reclamation plan, the state treasurer shall create an abandoned mine reclamation account for the purpose of accounting for monies received by the state from the secretary of the interior and any other monies authorized to be deposited in the account. The account shall be administered in compliance with the approved plan.

(b) Revenue to the account shall include amounts granted by the secretary of the interior under Title IV of P.L. 95-87, monies received by the state for the use or sale of lands acquired with monies from the account and such other monies which may be deposited in the account for use in carrying out the state reclamation program.

(c) There is created a coal mine subsidence mitigation account. Revenue to the account shall be ten percent (10%) of the amount granted by the secretary of the interior under title IV of P.L. 95-87 as provided by P.L. 100-34. Revenue shall be deposited in an interest bearing account and all interest shall be credited to the program. No monies from the account shall be expended prior to September 30, 1995. After September 30, 1995 the money may be expended as provided in this subsection. The legislature shall authorize expenditure by appropriation from the account as necessary to defray the administrative expenses of the program. The remaining funds in the account shall only be used to address the reclamation activities described in W.S. 35-11-1202(a)(i)(A) and (B) where mine reclamation is necessary for the protection of the public health or safety, with a priority given to pay for contractual services to mitigate and control mine subsidence that threatens structures. If authorized by the United States congress, funds from the account may be used for the repair or enhancement of structures defined in W.S. 35-11-1301(a)(iii), provided that no funds from the account may be used for any structure where construction is commenced after the effective date of this act unless an engineering assessment documenting the minimal risk of loss from mine subsidence precedes commencement of construction. The liability of the state to fulfill the requirements of this

subsection is limited to the amount of funds available in the account established in this subsection. The state has no obligations under this subsection except to the extent of federal funds deposited in the coal mine mitigation account and the interest thereon to operate the program.

35-11-1204. Right of entry.

(a) The director, administrator of the abandoned mine land division, or their designated authorized representative shall have the right to enter upon or have access to any property adversely affected by past coal mining practices to restore, reclaim, abate, control or prevent the adverse effects if the director makes a finding that:

(i) The adverse effects on land or water resources are such that, in the public interest, the action should be taken; and

(ii) The owners of the property either are not known or readily available or refuse to give permission to enter.

(b) Prior to entry, notice shall be given by mail to the owners, if known, or if not known, by posting notice upon the premises and advertising once in a newspaper of general circulation in the locality of the land.

(c) Monies expended for work on or to the premises and the benefits accruing to any premises entered upon shall be chargeable against the land and shall mitigate or offset any claim of or any action brought by any owner of any interest in the premises for any alleged damages by virtue of the entry. However, this provision is not intended to create new rights of action or eliminate existing immunities.

(d) The director, administrator of the abandoned mine land division, or their designated authorized representatives shall have the right to enter upon any property for the purpose of conducting exploratory work to determine the feasibility to restore, reclaim, abate, control or prevent the adverse effects.

(e) Any entry under this section shall be construed as an exercise of the state's police power and shall not be construed as an act of condemnation or trespass.

35-11-1205. Land acquisition and disposal.

(a) The state may acquire any land, by purchase, donation or condemnation, which is adversely affected by past coal mining practices if the director, with the concurrence of the governor, finds that acquisition of the land is necessary to successful reclamation and that:

(i) The acquired land, after restoration, reclamation, abatement, control or prevention of the adverse effects of past coal mining practices, will serve recreation and historic purposes, conservation and reclamation purposes or provide open space benefits; and

(ii) Permanent facilities such as a treatment plant or a relocated stream channel will be constructed on the land for the restoration, reclamation, abatement, control or prevention of the adverse effects of past coal mining practices; or

(iii) Acquisition of coal refuse disposal sites and all coal refuse thereon will serve the purposes of this article or that public ownership is desirable to meet emergency situations and prevent recurrences of the adverse effects of past coal mining practices.

(b) Title to all lands acquired pursuant to this section shall be in the name of the state. The price paid for land acquired under this section shall reflect the market value of the land as adversely affected by past coal mining practices.

(c) Where land acquired pursuant to this section is deemed to be suitable for industrial, commercial, residential or recreational development, the director, with the approval of the governor and the secretary of the interior, may sell the land for at least fair market value by public sale under a system of competitive bidding.

(d) The director, when requested after appropriate public notice, shall hold a public hearing, with appropriate notice, in the county or counties in which lands acquired pursuant to this section are located in order to afford all persons an opportunity to participate in the decision concerning the use or disposition of the lands after restoration, reclamation, abatement, control or prevention of the adverse effects of past coal mining practices.

35-11-1206. Liens for reclamation on private lands.

(a) Within six (6) months after the completion of projects to restore, reclaim, abate, control or prevent adverse effects of past coal or mineral mining practices on privately owned land, the director shall itemize the monies expended and may file a lien against the property with the appropriate county clerk. If the monies expended result in a significant increase in property value, a notarized appraisal by an independent appraiser shall be filed with the lien. The lien shall be the amount determined by the appraisal to be the increase in the fair market value of the land as a result of the restoration, reclamation, abatement, control or prevention of the adverse effects of past coal or mineral mining practices. No lien shall be filed under this section against the property of any person who neither consented to, participated in, nor exercised control over the mining operation which necessitated the reclamation project.

(b) The landowner may petition the district court for the district in which the majority of the land is located within sixty (60) days of the filing of the lien to determine the increase in the fair market value of the land. The amount reported to be the increase in value of the premises shall constitute the amount of the lien and shall be recorded with the lien.

(c) The lien provided in this section shall constitute a lien upon the land as of the date of the expenditure of the monies and shall have priority as a lien second only to the lien of real estate taxes imposed upon the land.

35-11-1207. Miscellaneous authority.

(a) The governor may promulgate any rules and regulations which may be necessary or expedient to implement and administer the provisions of this article.

(b) The director may construct and operate any plants, including major interceptors and other facilities appurtenant to the plant for the control and treatment of water pollution resulting from mine drainage.

(c) The governor may transfer funds to other appropriate state or federal agencies in order to carry out the reclamation activities authorized by this article.

35-11-1208. Mine subsidence mitigation program.

The governor may establish a coal mine subsidence mitigation program to assist property owners with mine subsidence problems that threaten life and property in this state. The program shall be operated by the director and be coordinated with the mine subsidence loss insurance program of W.S. 35-11-1301 through 35-11-1304. The program shall provide for backfilling of mine voids and stabilization of the land where evidence supports imminent or continuous threat to structures defined in W.S. 35-11-1301(a)(iii) if the threat is due to coal mine subsidence as defined in W.S. 35-11-1301(a)(ii).

35-11-1209. Contract eligibility.

(a) The abandoned mine land division shall not issue a contract to any contractor if the United States department of interior, office of surface mining applicant violator system shows the contractor has any one (1) or more of the following:

(i) Delinquent abandoned mine reclamation fee;

(ii) Federal or state failure-to-abate cessation order;

(iii) Unabated federal or state imminent harm cessation order;

(iv) Delinquent civil penalty issued under the Surface Mining Control and Reclamation Act of 1977, Public Law 95-87;

(v) Bond forfeiture if the violation upon which the forfeiture was based has not been corrected;

(vi) Unabated violation of federal or state law, rule or regulation pertaining to air or water environmental protection incurred in connection with any surface coal mining operation;

(vii) Unresolved notice of violation.

(b) As used in this section "ownership or controlling interest" means as defined in Title 30 of the Code of Federal Regulations part 773.5, as amended.

35-11-1210. Abandoned mine land funds reserve account.

(a) There is created the abandoned mine land funds reserve account.

(b) All funds received from the federal government, from the Surface Mining Control and Reclamation Act Amendments of 2006, Section 411(h)(1), pursuant to 2007 H.R. 6111, shall be deposited into the abandoned mine land funds reserve account.

(c) All funds and all interest generated on the funds, shall remain in the abandoned mine land funds reserve account until appropriated by the legislature.

(d) The funds under subsection (b) of this section are separate from and in addition to the funds distributed to Wyoming for the abandoned mine land program under W.S. 35-11-1201 through 35-11-1209.

(e) There is created the abandoned mine land funds balancing account. Notwithstanding other provisions of this section, the legislature may deposit into the balancing account and appropriate therefrom funds as it determines appropriate to substitute for or supplement abandoned mine land funds received from the federal government, from the Surface Mining Control and Reclamation Act Amendments of 2006, Section 411(h)(1).

ARTICLE 13
MINE SUBSIDENCE LOSS INSURANCE

35-11-1301. Definitions.

(a) As used in this act:

(i) "Administrator" means the administrator of the abandoned mine land division of the department of environmental quality;

(ii) "Mine subsidence loss" means loss caused by lateral or vertical movement, including collapse which results therefrom, of structures from collapse of man-made underground mines or from collapse of underground cavities resulting from burned coal seams but excludes loss caused by underground water, soil expansion, earthquake, landslide, volcanic eruption or collapse of storm or sewer drains or underground pipelines;

(iii) "Structure" means any dwelling, building or fixture, publicly or privately owned, permanently affixed to realty but excludes land, trees, plants and crops;

(iv) "This act" means W.S. 35-11-1301 through 35-11-1304.

35-11-1302. Mine subsidence loss insurance program; established; rulemaking authority.

(a) The governor shall establish an insurance program to cover mine subsidence loss to specified structures in this state. The program shall be operated by the director of the department of environmental quality through the administrator who shall contract for all services related to advertising, sales of the coverage and claims adjustment and may contract for other services necessary to the efficient operation of the program. The program shall cover all structures insured under this act for mine subsidence damage occurring after the effective date of the coverage, consistent with the contract terms and conditions. The program shall also cover structures which have been damaged before the effective date of this act, provided that:

(i) Damage to the structures was caused by subsidence of mine voids in the number one and seven coal seams in Rock Springs, Wyoming;

(ii) Claims made to the administrator documenting that initial subsidence damage was suffered on or about the dates of August 15, August 21, September 4 or September 10, 1985;

(iii) The property owner has made application for coverage under this act, paid the premium required by the administrator and paid an enrollment fee of one hundred dollars ($100.00);

(iv) The property owner executes and delivers instruments and papers and does whatever else is necessary to secure rights in the state to be subrogated to all the owner's right of recovery against any person, entity or organization for the damage and loss covered under this act; and

(v) Claims for damages and loss covered under this act and filed under the Wyoming Governmental Claims Act are withdrawn.

(b) The governor may promulgate rules and regulations necessary to establish and operate a mine subsidence loss insurance program under this act, including but not limited to:

(i) Contract terms and conditions;

(ii) Deductibles;

(iii) Coverage limits;

(iv) Claims adjustment procedures;

(v) Premium rates and enrollment fees sufficient to:

(A) Cover administrative expenses of the program including service contracts;

(B) Satisfy anticipated claims from mine subsidence loss;

(C) Establish a surplus to cover catastrophic hazard and to ensure solvency.

(vi) Designation of structures or areas for which coverage shall not be available;

(vii) Inspection of structures prior to issuing insurance coverage;

(viii) Rules or regulations necessary to enable the state to qualify for federal grants for state mine subsidence loss insurance programs.

(c) The governor may accept grants from any source to aid in establishing or operating the program under this act.

35-11-1303. Applicability of Wyoming Insurance Code; exemption.

(a) The Wyoming Insurance Code applies to transactions under this act except:

(i) The state and its officers, agencies and employees are exempt from the licensing, financial and tax requirements imposed by chapters 3, 4, 6, 7 and 8 of the Wyoming Insurance Code;

(ii) Any person who contracts with the state to transact insurance under this act is subject to the Wyoming Insurance Code as if the state were an insurer with a certificate of authority to transact the insurance in this state.

35-11-1304. Account created; premiums to be deposited; payment of expenses and claims.

There is created a mine subsidence loss insurance account. All premiums, fees, amounts recovered under the program and, where appropriate, grants shall be deposited into this account. The legislature shall authorize expenditures by appropriation from the account as necessary to defray the administrative expenses of the program but not claims for losses under policies. The remaining funds in the account shall be used and are appropriated to pay claims for losses under insurance policies under this act.

ARTICLE 14
STORAGE TANKS

35-11-1401. Repealed by Laws 1990, ch. 98, § 3.

35-11-1402. Repealed by Laws 1990, ch. 98, § 3.

35-11-1403. Repealed by Laws 1990, ch. 98, § 3.

35-11-1404. Repealed by Laws 1990, ch. 98, § 3.

35-11-1405. Repealed by Laws 1990, ch. 98, § 3.

35-11-1406. Repealed by Laws 1990, ch. 98, § 3.

35-11-1407. Repealed by Laws 1990, ch. 98, § 3.

35-11-1408. Repealed by Laws 1990, ch. 98, § 3.

35-11-1409. Repealed by Laws 1990, ch. 98, § 3.

35-11-1410. Repealed by Laws 1990, ch. 98, § 3.

35-11-1411. Repealed by Laws 1990, ch. 98, § 3.

35-11-1412. Repealed by Laws 1990, ch. 98, § 3.

35-11-1413. Repealed by Laws 1990, ch. 98, § 3.

35-11-1414. Short title; purpose; department report.

(a) This article is known and may be cited as the "Storage Tank Act of 2007".

(b) The legislature recognizes the threat to the public health, safety, welfare and the environment caused by pollution to soil and water from underground and aboveground storage tanks. The purpose of this article is to take primacy of the underground storage tank program and to provide funding to take corrective actions at sites contaminated by underground storage tanks and aboveground storage tanks.

(c) The legislature also recognizes that owners and operators cannot take corrective action without placing their businesses' existence in financial jeopardy. The legislature finds that, because Wyoming is a large rural state, it is in the public interest to take corrective action at contaminated sites so that fuel will continue to be readily available throughout Wyoming.

(d) The department shall prepare an annual report for the legislature identifying the actions taken and monies expended pursuant to this article.

35-11-1415. Definitions.

(a) As used in this article:

(i) "Corrective action" means an action taken to investigate, minimize, eliminate or clean up a release to protect the public health, safety and welfare or the environment;

(ii) "Corrective action account" means the account established in W.S. 35-11-1424;

(iii) "Department" means the department of environmental quality through its solid and hazardous waste division;

(iv) "Environmental pollution financial responsibility account" or "financial responsibility account" means the account established in W.S. 35-11-1427;

(v) "Operator" means any person in control of, or having responsibility for, the daily operation of the tank;

(vi) "Owner" means:

(A) In the case of an underground storage tank in use or brought into use on or after November 8, 1984, any person who owns an underground storage tank while it is used for the storage, use or dispensing of regulated substances;

(B) In the case of an underground storage tank in use before November 8, 1984, but no longer in use after that date, any person who owned such a tank immediately before the discontinuation of its use;

(C) Any person who owns an aboveground storage tank meeting the definition of paragraph (xi) of this subsection;

(D) In the case of a site contaminated by an aboveground or underground storage tank regulated under this article and where all tanks have been permanently closed, any person who owns the site.

(vii) "Regulated substance" means:

(A) Any substance defined in section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 but not including any substance regulated as a hazardous waste under subtitle C of the Resource Conservation and Recovery Act; and

(B) Petroleum, including crude oil or any fraction thereof, which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

(viii) "Release" means any spilling, leaking, emitting, discharging, escaping, leaching or disposing from a tank into groundwater, surface water or subsurface soils;

(ix) "Underground storage tank" means and includes any one (1) or combination of underground storage tanks, including underground pipes connected thereto, used to contain an accumulation of regulated substances, and the volume of which, including the volume of the underground pipes connected

thereto, is ten percent (10%) or more beneath the surface of the ground, but does not include:

(A) A farm or residential underground storage tank of one thousand one hundred (1,100) gallons or less capacity used for storing motor fuel for noncommercial or agricultural purposes;

(B) An underground storage tank used for storing heating oil for consumptive use on the premises where stored;

(C) Septic tanks;

(D) A pipeline facility, including gathering lines, regulated under:

(I) Repealed by Laws 2017, ch. 35, § 3.

(II) Repealed by Laws 2017, ch. 35, § 3.

(III) An intrastate pipeline facility regulated under state laws, as provided in 49 U.S.C. chapter 601, which is determined by the United States secretary of transportation to be connected to a pipeline or to be operated or intended to be capable of operating at pipeline pressure or as an integral part of a pipeline;

(IV) 49 U.S.C. chapter 601.

(E) Surface impoundments, pits, ponds or lagoons;

(F) Storm water or wastewater collection systems including oil/water separators used to separate oil and water at oil production sites, gas processing plants and refineries;

(G) Flow-through process tanks;

(H) Liquid traps or associated gathering lines directly related to oil or gas production and gathering operations;

(J) Storage tanks situated in an underground area, if the storage tank is situated upon or above the surface of the floor;

(K) Underground storage tanks of one hundred ten (110) gallons or less of holding capacity;

(M) Underground storage tanks containing de minimus concentrations of regulated substances;

(N) Emergency spill or overflow containment underground storage tank systems that are expeditiously emptied after use;

(O) An underground storage tank system holding hazardous wastes listed or identified under Subtitle C of the federal Solid Waste Disposal Act or a mixture of such hazardous waste and other regulated substances;

(P) A wastewater treatment tank system that is part of a wastewater treatment facility regulated under section 307(b) or 402 of the federal Clean Water Act;

(Q) Any equipment or machinery that contains regulated substances for operational purposes such as hydraulic lift tanks and electrical equipment tanks.

(x) "This article" means W.S. 35-11-1414 through 35-11-1432;

(xi) "Aboveground storage tank" means any one (1) or a combination of containers, vessels and enclosures, including structures and appurtenances connected to them, constructed of nonearthen materials including but not limited to concrete, steel or plastic which provides structural support, the volume of which including the pipes connected thereto is more than ninety percent (90%) above the surface of the ground, which is used by a dealer to dispense gasoline or diesel fuels;

(xii) "Dealer" means a person meeting the definition of W.S. 39-17-101(a)(v) or 39-17-201(a)(vi);

(xiii) "Tank" means and includes both underground and aboveground storage tanks as defined by this act.

35-11-1416. Rules and regulations.

(a) The council shall promulgate rules and regulations necessary to administer this article after recommendation from the director of the department, the administrators of the various divisions and their respective advisory boards. The

rules shall include but shall not be limited to rules and regulations which:

(i) Provide for performance, operating and installation standards for underground storage tanks which shall be no less or no more stringent than the federal standards. The rules shall include, but shall not be limited to, standards for upgrading existing facilities, abandonment, closure, compatibility, construction, design, installation, record maintenance and release detection, spill and overfill, inspection procedures and compliance deadlines. The rules shall include standards for aboveground storage tanks determined by the council to be necessary to meet the goals of this paragraph;

(ii) Require proof of financial assurance as required by federal law for underground storage tanks;

(iii) Specify the requirements for delegating installation or modification inspection authority including but not limited to requirements for inspectors;

(iv) Establish a procedure or procedures for reporting any release from a tank;

(v) Require taking corrective action in response to a reported release from a tank. These rules may include provisions under which priorities for corrective action may be established considering the state resources available to take corrective actions and the threat posed to public health, safety and welfare or the environment;

(vi) Require records for compliance with repairs and upgrades to be maintained for the operational life of the tank;

(vii) Adopt the requirements for notification to the department when there is a change of ownership or control over a tank in accordance with W.S. 35-11-1420(a);

(viii) Specify the requirements for notifying the department of installations or modifications in accordance with W.S. 35-11-1420(b);

(ix) Specify standards for restoration of the environment;

(x) Require proof of financial assurance for aboveground storage tanks if the owner of the aboveground

storage tank desires to be eligible for coverage under the financial responsibility account.

35-11-1417. Noninsurance proviso.

Nothing in this article shall be construed as creating an insurance company nor in any way subjecting the accounts created to the laws of the state regulating insurance or insurance companies.

35-11-1418. Repealed By Laws 2007, Ch. 88, § 3.

35-11-1419. Tank registration; proof of insurance.

(a) After each new installation or modification of a regulated storage tank system the owner of a tank shall register the tank with the department on forms developed and furnished by the department. The registration form shall be submitted under oath or affirmation. The forms shall include but not be limited to:

(i) The name, address and telephone number of the tank owner;

(ii) The name, address and telephone number of the tank operator;

(iii) A description of the location of the facility where the tank is maintained or operated and the location of the tank at that facility;

(iv) The type and age of each tank at the facility;

(v) The type of substance stored or contained in the tank;

(vi) The size of each tank;

(vii) Whether the tank is currently in use, and if not, the most recent date of use of the tank if known;

(viii) The most recent date the tank was tested and a copy of the test results if not previously submitted;

(ix) Whether the owner of the tank has insurance or other types of financial assurance to cover at least thirty

thousand dollars ($30,000.00) as specified in W.S. 35-11-1428(c)(i);

(x) Proof as required by federal law that an owner of more than one hundred (100) underground storage tanks anywhere in the United States has insurance, or other environmental pollution financial responsibility instrument, indicating at least two million dollars ($2,000,000.00) in liability protection for releases occurring from any of those regulated tanks; and

(xi) Other information as may be required by rules and regulations.

35-11-1420. Tank notification required; change of owner; installation requirements; inspections.

(a) In the event of the transfer of any tank to a different owner, notification of the transfer shall be provided to the department by the new and former owners. Such notifications shall be made on forms developed and provided by the department and shall include:

(i) The name, address and telephone number of the former and new tank owner;

(ii) The name, address and telephone number of the former and new tank operator;

(iii) A description of the location of the facility where the tank is maintained or operated and the location of the tank at that facility; and

(iv) Proof of insurance or other types of financial assurance by the new or former owner as applicable.

(b) No person shall install or substantially modify, or cause to be installed or substantially modified, any new or replacement tank without thirty (30) days prior notification to the department. Upon completion of the installation or modification the owner shall notify the department and the department shall within ten (10) days of receiving notification of completion, inspect the site or have the site inspected by a qualified state, local government or private inspector. No tank shall be operated until the department determines the installation or modification meets the applicable standards and the department has issued a written inspection letter to the

tank owner stating that the facility, as constructed or modified, meets state standards, except that if the department has not inspected the tank within fifteen (15) days after receiving notice of completion, the tank may be operated without written notification of the department until the tank is inspected.

(c) The department shall collect an installation or modification fee of two hundred fifty dollars ($250.00) for each tank or for all multiple tanks installed or modified at the same time and at the same site. The fees collected under this subsection shall be deposited in the general fund.

(d) If an owner or operator is unable to comply with subsection (b) of this section because of an emergency, he shall inform the department as soon as possible after the emergency is known. The owner or operator shall provide the information on the installation or modifications as required by this section without delay thereafter but within five (5) working days from the time the department is informed of the emergency.

35-11-1421. Reporting releases.

An owner or operator shall report a known or suspected release to the department as required by rules and regulations.

35-11-1422. Right of entry; inspection.

(a) When requested by an authorized agent of the state the owner or operator shall:

(i) Provide information to determine compliance with the statutes and rules and regulations;

(ii) Provide access to any site or premises where a tank is located or where any records relevant to the operation of a tank are kept;

(iii) Provide copies of any records relevant to the operation of a tank;

(iv) Allow the authorized agent to obtain samples of the regulated substances;

(v) Allow the authorized agent to inspect or conduct the monitoring or testing of the tank system; and

(vi) Allow the authorized agent entry on the premises to do assessments and corrective actions.

(b) A duplicate sample taken by or for the state for testing shall be provided to the tank owner if requested by the owner. A duplicate copy of the analytical report from the department pertaining to the samples taken shall be provided as soon as practicable to the tank owner.

(c) No person conducting an inspection under this section shall unreasonably interfere with the operations, business or work, of any person at the site being inspected. The tank owner or operator shall be given the opportunity to accompany any person making an inspection.

(d) In carrying out a corrective action the department has the right to construct and maintain any structure, monitor well, recovery system or any other reasonable and necessary item associated with taking corrective action.

(e) The department shall give a minimum of seven (7) working days notice prior to an investigation unless an emergency exists.

35-11-1423. Public notice; right to intervene.

(a) The department shall notify the affected public of all confirmed releases requiring a plan for soil and groundwater remediation, and upon request, provide or make available to the interested public information concerning the nature of the release and the corrective actions planned or taken.

(b) Any person having an interest that is or may be adversely affected may intervene as a matter of right in any civil action for remedies specified in this act.

35-11-1424. Corrective action account created; use of monies; cost recovery.

(a) There is created the corrective action account. This account is intended to provide for financial assurance coverage required by federal law and shall be used by the department to take corrective action in response to a release and to remediate solid waste landfills. The department shall use monies from the corrective action account as appropriated by the legislature for the administration of this article and W.S. 35-11-533 through 35-11-537. Interest earned by this account shall be deposited

in the general fund. Monies in the corrective action account shall also be used for the state water pollution control revolving loan account pursuant to W.S. 16-1-201 through 16-1-207. Except as provided in subsection (p) of this section, and contingent on availability of money in the account, the director shall distribute monies in the corrective action account to the solid waste landfill remediation account created by W.S. 35-11-535 on July 1 of each specified year in an amount not less than:

(i) 2019-two million dollars ($2,000,000.00);

(ii) 2020-five million dollars ($5,000,000.00);

(iii) 2021 – six million dollars ($6,000,000.00);

(iv) 2022 – six million dollars ($6,000,000.00);

(v) 2023 – seven million dollars ($7,000,000.00);

(vi) 2024 and each year thereafter – the director shall determine expected expenditures from the corrective action account for the underground storage tank program for the next fiscal year and retain monies equal to that amount in the corrective action account, with the remainder of the monies deposited to the landfill remediation account, but in no event shall monies in the corrective action account on July 1 of any year be less than five million dollars ($5,000,000.00).

(b) The department shall establish priority lists of sites contaminated by tanks. The priorities shall be based on public health, safety and welfare and environmental concerns. The council after recommendation from the director of the department, the administrator of the various divisions and their respective advisory boards shall promulgate rules and regulations for defining priorities.

(c) The department shall use corrective action account monies to take corrective actions at sites contaminated by tanks. The department shall take corrective actions based on the sites' placement on the priority list. However, if an emergency threat to public health, safety and welfare or to the environment exists, or costs of cleanup may be significantly reduced, a site may be moved up on the priority list for immediate corrective action.

(d) For a site to be eligible for use of monies in the corrective action account, the owner or operator of the site shall, if required, pay the tank fee required by W.S. 35-11-1425, conduct a minimum site assessment, as defined by rule and regulation, and, if contamination is found, take action to prevent continuing contamination. The department shall notify all owners and operators on record at the department of the minimum site assessment requirements. Sites which do not meet the eligibility requirements specified in this subsection shall not be eligible for use of any monies in the corrective action account. Owners and operators of these ineligible sites shall not use the corrective action account for proof of financial assurance for the sites. Pending determination of the site's eligibility, the department may use corrective action account monies for corrective actions at a contaminated site.

(e) Sites where tanks have been removed or abandoned in accordance with any government regulations effective at the time of abandonment may become eligible for use of corrective action account monies if the person who owns the site pays a two hundred dollar ($200.00) annual fee per site and conducts a site assessment as required by subsection (d) of this section. The annual fee per site required under this subsection shall be paid for a maximum of ten (10) years and shall then lapse until corrective action is undertaken by the department. Failure to meet these requirements may subject the person who owns the site to suit for corrective action or cost recovery. The fee collected under this subsection shall be deposited in the corrective action account. The department shall notify all the owners and operators who are on record at the department who have removed or properly abandoned a tank of the provisions of this subsection.

(f) If, after due diligence, no owner or operator can be found, a contaminated site shall be placed on the priority list in appropriate rank with other sites. If an owner or operator of a site which is not in compliance and the owner or operator refuses to comply with subsection (d) of this section is discovered, that site shall be considered as ineligible for use of corrective action account monies and shall be treated as defined in subsection (g) of this section.

(g) The department may, by an action brought by the attorney general against an owner or operator, recover reasonable and necessary expenses incurred by the department in taking a corrective action. These recoverable expenses include but are not limited to costs of investigating a release,

administrative costs and reasonable attorney fees. The department's certification of expenses is prima facie evidence the expenses are reasonable and necessary. Expenses recovered under this section shall be deposited in the corrective action account unless otherwise required by state or federal law. The department may sue for recovery of expenses only if:

(i) The owner or operator has failed to take the actions required for that site in subsection (d) of this section; or

(ii) The owner or operator had tank insurance for that site at the time of the release. However no such recovery under this subsection may exceed the limits or coverage of the insurance policy in question.

(h) The state has a right of subrogation to any insurance policies in existence at the time of the release to the extent of any rights the owner may have had under that policy. This right of subrogation shall apply regardless of the owner's eligibility to use corrective action account monies under subsection (d) of this section. In implementing this section the department shall:

(i) Notify all known owners and operators, past and present, of sites where contamination from a tank is known to exist and request information relating to any insurance policies they possess or possessed at the time of release that may provide coverage for corrective action or cleanup of the contamination at the site;

(ii) Notify all insurance companies which have been identified to the department pursuant to W.S. 35-11-1419 and may have issued insurance policies that provide coverage for contamination from tanks and request copies of any such policies. In notifying insurance companies the department shall provide the insurance company with the name of all known owners, past and present, and the legal description of the site upon which the tank is or was located. The department notification shall require each insurance company to notify the department whenever there is a change in the insurance policy, including cancellation.

(j) Nothing in this section shall be construed to authorize payments for the repair, removal or replacement of any tank or equipment.

(k) Nothing in this section shall be construed to authorize payments or commitments for payments in amounts in excess of the monies available.

(m) Within thirty (30) days after receipt of notification that the corrective action account has become incapable of paying for assured corrective actions, the owner or operator shall obtain alternate financial assurance.

(n) Any person or insurance company notified by the department under paragraph (h)(i) or (ii) of this section shall provide the requested information to the department within thirty (30) days of receipt of the notification. In addition to other remedies provided for in this act, failure of any insurance company to provide copies of the requested policies shall result in the statute of limitations provided in subsection (o) of this section being tolled for any action the department may bring in subrogation until such time as the policy is discovered.

(o) Notwithstanding any other applicable period of limitation, upon notification by any owner, operator or insurance company of any insurance coverage in existence, the department shall have five (5) years to commence any action for the recovery of proceeds under the applicable policy.

(p) The director is authorized to withhold distributions from the corrective action account to the municipal solid waste remediation account as provided in subsection (a) of this section in the event of:

(i) An emergency involving a leaking underground storage tank which requires immediate corrective action which will require an expenditure of monies in excess of the monies available in the corrective action account; or

(ii) Monies in the account are less than the amount required by federal law to provide for financial assurance coverage or adequate leaking underground storage tank remediation.

(q) The director shall submit a report to the joint minerals, business and economic development interim committee by June 15, 2019 and by June 15 of every year thereafter, describing the amount to be withheld in the corrective action account pursuant to subsection (a) of this section, and the factors used in making that determination.

(r) In the event the director exercises the authorization provided under subsection (p) of this account, the director shall inform the joint minerals, business and economic development interim committee in writing of the withholding of the distribution.

35-11-1425. Tank fee; deposit into corrective action account; late fee.

(a) On or before January 1 of each year the owner of a tank shall pay a fee to the department of two hundred dollars ($200.00) per tank owned, except the owner of an aboveground storage tank subject to this section that holds five thousand (5,000) gallons or less shall pay a fee of fifty dollars ($50.00) per tank owned. This fee shall be deposited in the corrective action account.

(b) On April 1 of each year the department may assess a late payment fee of one hundred dollars ($100.00) per tank or contaminated site against any owner who has not paid the annual fee required pursuant to subsection (a) of this section or W.S. 35-11-1424(e). This late fee shall be paid by the owner and shall be in addition to the annual fee required pursuant to subsection (a) of this section or W.S. 35-11-1424(e) and shall be deposited in the department's corrective action account.

(c) The change from July 1 to January 1 for the due date of storage tank fees shall be revenue neutral. The department shall collect one-half (1/2) of the annual fee on July 1, 2007 and shall collect the full annual fee on January 1, 2008 and annually thereafter.

35-11-1426. Restoration standard.

Any owner or operator, department or other person taking a corrective action shall restore the environment to a condition and quality consistent with standards established in rules and regulations.

35-11-1427. Financial responsibility account.

There is created the environmental pollution financial responsibility account. This account is intended to provide for financial assurance coverage required by federal law for underground storage tanks and establish financial assurance coverage for aboveground storage tanks and shall be for the

purpose of compensating third parties for damage caused by releases from one (1) or more tanks. Interest earned by the account shall be deposited in the general fund.

35-11-1428. Uses of financial responsibility account monies.

(a) As provided in this section, the department shall, on application by an owner or operator, direct the payment of monies from the financial responsibility account to satisfy judgments against the owner or operator for third party property damage or personal injury.

(b) The attorney general shall be served by certified mail return receipt requested with a copy of the complaint filed in any suit initiated against an owner or operator for third party property damage or personal injury. Service of the complaint on the attorney general is a jurisdictional requirement in order to maintain the suit. The attorney general shall be notified in writing by certified mail return receipt requested of any judgment, compromise, settlement or release entered into by an owner or operator. As provided in this section, the department shall, on application by an owner or operator, direct the payment of monies from the financial responsibility account to pay settlements for third party property damage or personal injury on terms negotiated by the attorney general and approved by the council.

(c) The monies from the financial responsibility account shall only be used to pay judgments and settlements not to exceed one million dollars ($1,000,000.00), for all the damages arising from releases from one (1) or more of the tanks on a site, provided that the owner or operator:

(i) Shall remain liable for payment of the judgment or settlement up to, but not exceeding, thirty thousand dollars ($30,000.00). The department may bring an action against the owner or operator to recover any amount paid by the department pursuant to a judgment or settlement for which the owner or operator remains liable under this paragraph;

(ii) Has not been relieved of his responsibility for the judgment or settlement by operation of law or otherwise. For purposes of this paragraph, an owner or operator shall not be deemed to have been relieved of his responsibility for the judgment or settlement by virtue of the Governmental Claims Act; and

(iii) Pays the tank fee required by W.S. 35-11-1424(e) or 35-11-1425, conducts a minimum site assessment, as defined by rule and regulation, and, if contamination is found, takes action to prevent continuing contamination.

(d) Nothing herein shall be construed to authorize the department to obligate funds from the financial responsibility account for payment of costs which may be associated with, but are not integral to, the personal injury or property damage such as the costs for modifying, removing or replacing tanks.

(e) The department shall establish a priority list for purposes of the financial responsibility account. The department shall not approve use of monies from the financial responsibility account if there are insufficient monies in the account to fund the application before the department and all other outstanding commitments.

(f) Nothing in this section shall be construed to authorize commitments to cover property or personal injury damages in excess of the balance in the financial responsibility account.

(g) Within thirty (30) days after receipt of notification that the financial responsibility account has become incapable of paying for assured third party compensation costs, the owner or operator shall obtain alternate financial assurance.

35-11-1429. Tank requirements; rulemaking authority.

(a) Cathodic protection shall be installed and operated on all internally lined underground storage tanks no later than June 30, 2008.

(b) All underground storage tank systems that dispense more than five hundred thousand (500,000) gallons per month of a regulated substance shall be replaced with double wall tanks and lines with interstitial leak monitoring no later than June 30, 2012, or thirty (30) years from the date of installation of the underground storage tank, whichever is later.

(c) Double wall underground storage tanks and lines with interstitial leak monitoring shall be installed whenever any underground storage tank is installed.

(d) Double wall underground storage tank system lines with interstitial leak monitoring shall be installed whenever any line is installed on any underground storage tank system. Except piping connected to field-constructed underground storage tank systems with a capacity exceeding fifty thousand (50,000) gallons or piping that is used for an airport hydrant system, if existing single wall underground piping connected to an underground storage tank system fails due to corrosion or fails and has been recalled by the manufacturer, the entire run of single wall piping shall be replaced with double wall piping with interstitial monitoring regardless of the length of piping requiring repair.

(e) The council may promulgate rules and regulations to administer this section after recommendation from the director.

(f) A double wall and interstitially monitored underground storage tank or underground piping installed after December 1, 2005, shall be interstitially monitored for the lifetime of the tank or piping.

(g) Except essential homeland security systems, emergency generator systems and systems used for other disaster relief efforts, if a new piping interstitial monitoring system is installed and sump sensors are used as standalone automatic leak detectors, the system shall be configured to shut off the flow of product in that piping run when a sump sensor triggers an alarm.

35-11-1430. W.S. 35-11-1430(b) repealed this section effective June 30, 2009. (Laws 2007, Ch. 172, § 1.)

35-11-1431. Tank system operators, installers and testers licensing; rulemaking authority.

(a) After recommendation from the director and consultation with the appropriate advisory boards, the council shall promulgate rules and regulations to develop standards for the licensure of all tank system operators, installers and testers. At minimum, those rules and regulations shall:

(i) Prescribe licensure requirements for any person installing, modifying or testing an underground or aboveground storage tank;

(ii) Prescribe class A and B operator licensure requirements which shall include passing a department approved exam;

(iii) Prescribe training requirements for class C operators;

(iv) Require at least one (1) person present on the job site to be licensed by the department to install or modify a tank system.

35-11-1432. Temporarily out of use tanks; rulemaking.

Except tanks within operating facilities, any underground or aboveground storage tank that has been temporarily out of use for more than twelve (12) months shall be permanently closed in accordance with department rule and regulation not later than twelve (12) months after the date on which the tank is placed in temporarily out of use status or July 1, 2018, whichever is later, unless a time extension is authorized in writing by the department.

ARTICLE 15
RADIOACTIVE WASTE STORAGE FACILITIES

35-11-1501. Definitions.

(a) As used in this article:

(i) "High-level radioactive waste" means as defined in the "Nuclear Waste Policy Act of 1982" as amended, 42 U.S.C. § 10101 et seq.;

(ii) "High-level radioactive waste storage" means the emplacement of high-level radioactive waste or spent nuclear fuel regardless of the intent to recover that waste or fuel for subsequent use, processing or disposal;

(iii) "High-level radioactive waste storage facility" includes any facility for high-level radioactive waste storage, other than a permanent repository operated by a federal agency pursuant to the Nuclear Waste Policy Act of 1982, as amended. "High-level radioactive waste storage facility" includes an independent spent fuel storage installation as defined in title 10 of the Code of Federal Regulations part 72 section 3;

(iv) "Spent nuclear fuel" means as defined in the Nuclear Waste Policy Act of 1982 as amended, 42 U.S.C. § 10101 et seq.

35-11-1502. Application to site a high-level radioactive waste storage facility; requirements; payment of costs.

(a) Any person undertaking the siting of any high-level radioactive waste storage facility shall do so in accordance with this article. Facilities subject to this article are exempt from the jurisdiction of the Industrial Development Information and Siting Act, W.S. 35-12-101 et seq.

(b) Any person undertaking the siting of any facility governed by this section shall submit an application documenting the following information to the director:

(i) The criteria upon which the proposed site was chosen, and information showing how the site meets the criteria of the nuclear regulatory commission and the department pursuant to W.S. 35-11-1506(c)(xvi);

(ii) The technical feasibility of the proposed waste management technology;

(iii) The environmental, social and economic impact of the facility in the area of study;

(iv) Conformance of the plan with the federal guidelines for a high-level radioactive waste storage facility.

(c) The application shall be accompanied by an initial deposit of eight hundred thousand dollars ($800,000.00) plus any excess amount collected from the feasibility agreement pursuant to W.S. 35-11-1506(c). Effective July 1, 2018, and annually thereafter, the amount of the initial deposit shall be adjusted for inflation by the department using the consumer price index or its successor index of the United States department of labor, bureau of labor statistics, for the calendar year immediately preceding the date of adjustment. The purpose of the initial deposit and additional monthly payments as billed to the applicant shall be to cover the costs to the state associated with the investigation, review and processing of the application and with the preparation and public review of the report required in W.S. 35-11-1503 and 35-11-1504. Unused fees under this subsection shall be refunded to the applicant. The initial deposit shall be held in an interest bearing account in reserve

by the department to guarantee that sufficient funds are available to pay for any outstanding costs incurred by the state in the event that the applicant is unable to complete the application process for any reason. Any costs to the state for application processing, preparation of the report required in W.S. 35-11-1503 and 35-11-1504 and for any other costs incurred by the state to fulfill any requirement of article 15 of this act, shall be billed by certified mail and reimbursed to the state by the applicant on a monthly basis at a rate established by the state for comparable other similar permitting reviews. The applicant may appeal the assessment to the department within twenty (20) days after receipt of the written notice. The appeal shall be based only upon the allegation that the particular assessment is erroneous or excessive. Failure of the applicant to pay within thirty (30) days of the date of mailing shall be cause for suspension or termination of the application process. Upon termination of the process, any unused sum remaining in said reserve account shall be returned to the applicant.

(d) Any applicant for a permit to construct and operate a high-level radioactive waste storage facility shall share pertinent information relevant to both state and nuclear regulatory commission permitting. It is the intention of this article that an applicant can supply information common to both state and federal permitting, without duplication of effort.

(e) Upon receipt of an application under subsection (b) of this section, the director shall, at the earliest possible date, apply for any funds which may be available to the state from the Interim Storage Fund or the Nuclear Waste Fund under the provisions of 42 U.S.C. § 10156 and 42 U.S.C. § 10222. The director may apply for other funds which may become available to the state under any other federal or state program for high-level radioactive waste storage facilities. Nothing in this subsection shall be construed as authorizing the siting, construction or operation of any high-level radioactive waste storage facility not otherwise authorized under this article.

35-11-1503. Preparation of the report by the department.

(a) Except as otherwise provided in this subsection, the department shall within twenty-one (21) months of receipt of an application and the application fee under W.S. 35-11-1502, prepare a report which examines the environmental, social and economic impacts of any proposal to site a high-level radioactive waste storage facility within the state. The director may determine that more than twenty-one (21) months is

required to complete the report. If the director makes this determination, the director shall extend the deadline as appropriate and notify the applicant and the legislature of the additional time required. The director may employ experts, contract with state or federal agencies, or obtain any other services through contractual or other means to prepare the report.

(b) Any report prepared under this section shall evaluate and assess all probable impacts associated with any proposal to site a high-level radioactive waste storage facility within the state, including but not limited to short term impacts and any other impacts which may be serious, reversible or irreversible. In developing the report under this section, the director may consider the guidelines and standards for preparation of an environmental impact statement under section 102(2)(C) of the National Environmental Policy Act of 1969, as amended, 42 U.S.C. § 4332(2)(C). If appropriate and to the extent practicable, the department shall prepare a joint report with the nuclear regulatory commission under the National Environmental Policy Act.

(c) The report shall evaluate the environmental, social and economic impacts to the state from a range of alternative actions, including the siting of the high-level radioactive waste storage facility as proposed, the no action alternative and other alternatives.

(d) The report shall include a proposed benefits agreement, which shall be negotiated with the person who proposes to site the high-level radioactive waste storage facility.

(e) The director shall, in the preparation of the report, identify a recommended action from among the alternatives evaluated.

35-11-1504. Public review of any report for the siting of a high-level radioactive waste storage facility; submission to legislature.

(a) The department shall submit any report prepared under W.S. 35-11-1503 for public review as required under this section. The public shall be afforded an opportunity to review the report and provide comments to the director. The director shall hold public hearings in the county or counties where the proposed storage facility will be located and throughout the

state, to the extent practicable, to receive comments on the report.

(b) Following any public review of the report as provided in this section, but in no event before the United States department of energy issues a final environmental impact statement in accordance with the law along with a license application for a permanent repository for high-level radioactive waste, the director shall submit the report to the legislature. The submission by the director shall include:

(i) The report;

(ii) The director's preferred or recommended alternative;

(iii) Any conditions proposed by the director regarding siting, construction, operation, monitoring, decontamination or decommissioning, or any other element of the proposed project that the director determines to be necessary to protect the public health or environment of the state, or to mitigate local or statewide social or economic impacts;

(iv) The proposed benefits agreement, including but not limited to:

(A) The number of jobs that will be created in planning, permitting, licensing, site analysis and preparation, purchasing, construction, transportation, operation and decommissioning;

(B) Local and state taxes generated by all aspects of the project;

(C) Benefits from job training, education, communication systems, monitoring and security systems;

(D) Mitigation payments to the affected communities;

(E) Cash and other in kind benefits that will offset any adverse effects;

(F) The duration of benefits from the project of all kinds.

(v) A summary of and a discussion of the considerations given by the department to any public comments received.

35-11-1505. Benefits agreement.

No benefits agreement shall be finally effective until authorized by the legislature under W.S. 35-11-1506. The benefits agreement shall be sufficient to offset adverse environmental, public health, social or economic impacts to the state as a whole, and specifically to the local area hosting the storage facility. The benefits agreement shall be attached to and made part of any permit for the facility. Failure to adhere to the benefits agreement shall be considered grounds for enforcement up to and including permit termination. No benefits agreement as provided in this section shall limit or waive any rights afforded to the state by the Nuclear Waste Policy Act, as of March 1, 1995, including any right to disapprove any site or siting.

35-11-1506. Legislative approval of the siting of high-level radioactive waste storage facilities; conditions.

(a) Except as provided in subsection (e) of this section, no construction may commence, nor shall any high-level radioactive waste storage facility be sited within this state, unless the legislature has enacted legislation approving the siting, construction and operation of the facility in accord with this section. Any authorization of a facility under this section shall not be considered to grant to any person an exclusive right or franchise to store high-level radioactive wastes within the state.

(b) In addition to any facility which meets the requirements of subsection (e) of this section, the legislature may authorize one (1) or more facilities under subsection (a) of this section if it finds that:

(i) The siting of a high-level radioactive waste storage facility within the state is in the best interests of the people of Wyoming;

(ii) The siting of a high-level radioactive waste storage facility within the state can be accomplished without causing irreversible adverse environmental, public health, social or economic impacts to the state as a whole, and

specifically to the local area hosting the proposed storage facility;

(iii) The proposed benefits agreement is sufficient to offset any adverse environmental, public health, social or economic impacts to the state as a whole, and specifically to the local area hosting the proposed storage facility; and

(iv) Sufficient safeguards, by contractual assurances or other means, exist to provide that:

(A) The authorization to site, construct and operate any proposed storage facility shall be limited to no more than forty (40) years, provided that extensions may be granted if the legislature enacts legislation authorizing nuclear waste storage facilities to operate for more than forty (40) years;

(B) Any wastes in storage at any facility shall remain the property of the waste generator or civilian nuclear power reactor owner, until transferred to permanent storage or until the federal government takes title to the wastes under the provisions of the Nuclear Waste Policy Act, 42 U.S.C. § 10101 et seq.;

(C) Conditions substantially equivalent to the licensing conditions imposed upon monitored retrievable storage facilities under 42 U.S.C. § 10168(d) existing as of March 1, 1995 shall be effective for any high-level radioactive waste storage facility authorized under this article; and

(D) There exists either a cooperative agreement between the state and the nuclear regulatory commission, or such other legally binding agreement for specific performance between the director and the applicant, which shall provide for state regulation of the facility.

(c) With permission of the governor and the management council, an applicant for either a monitored retrievable storage facility or an independent spent fuel storage installation may enter into a preliminary but nonbinding feasibility agreement and study with the director which shall be submitted to and reviewed by the director, governor and the management council. The public shall be afforded a thirty (30) day public comment opportunity to review the feasibility agreement prior to its submission to the governor and the management council. The purposes of this feasibility agreement and study are to allow

the state to make a preliminary determination, whether, on the basis of the feasibility agreement and study, the proposed benefits substantially outweigh any adverse effects and to allow an applicant based on the state's preliminary review of any proposed benefit to determine whether or not a prudent investor, planner, builder and operator would decide to proceed with an application. Upon entering into a feasibility agreement, the applicant shall pay to the state a fee of eighty thousand dollars ($80,000.00). Effective July 1, 2018, and annually thereafter, the fee shall be adjusted for inflation by the department using the consumer price index or its successor index of the United States department of labor, bureau of labor statistics, for the calendar year immediately preceding the date of adjustment. The fee shall be used by the department for costs attendant to the preliminary agreement. Excess funds collected may be used by the department to review an application submitted under W.S. 35-11-1502. Appropriate time shall be afforded the director, the governor, the management council and the applicant to prepare and to evaluate the preliminary agreement and study, but neither the state nor the applicant shall unnecessarily delay the feasibility agreement and study. The preliminary feasibility agreement and study shall not supersede nor replace other requirements under this act. This agreement and study shall set forth the following:

(i) The source and adequacy of the financing for the facility and the applicant's ability to fulfill the terms of any contract entered into regarding the siting, construction or operation of the facility. The information required under this paragraph shall include, but is not limited to, audited financial statements covering the five (5) year period prior to the feasibility agreement, a listing of all partners if the applicant is a partnership and a listing of all persons owning or controlling five percent (5%) or more of its stock if the applicant is a corporation;

(ii) Financial strengths of prospective storage customers;

(iii) The technical experience of the applicant and his associates in permitting before the nuclear regulatory commission, and in design, construction and operation of nuclear facilities;

(iv) The preliminary design plan and technical feasibility of the planned temporary fuel rod storage facility;

(v) The best estimate of a range of costs for the permitting, planning and construction of the facility, based upon available information;

(vi) The proposed storage capacity of the planned facility, necessary to give reasonable assurance of economic feasibility, with evidence to show that the proposed storage capacity will not adversely affect the health and safety of Wyoming people or the environment;

(vii) How the applicant will proceed with the facility to assure that its construction, operation and decommissioning will neither temporarily nor permanently adversely affect the health and safety of Wyoming people;

(viii) A best estimate of a time frame required to obtain the necessary permits, including nuclear regulatory commission licensing, design and construction, and a suggested time frame for decisions by Wyoming government to meet the target timetable;

(ix) An outline of transportation plans, including rail and highway;

(x) Substantial assurances that the facility is temporary, including options for that assurance including a time frame for the movement of the temporarily stored fuel rods to a permanent repository, delivery of the stored rods to reprocessing centers or to a purchaser, domestic or foreign, buying the rods for future reprocessing;

(xi) A range of benefits the nearby communities and the state might expect in return for temporarily storing the fuel rods, and a best estimate of when the benefits might begin to be received by the nearby communities and state;

(xii) A mutual review, by the state and applicant, of a range of taxes the state might reasonably impose on the facility and the fuel rods while they are in temporary storage including the annual acceptance taxes to be levied on fuel rods, based upon the kilograms of fuel rods stored at the Wyoming facility;

(xiii) A description of security measures that would be installed in and around the facility to isolate and protect it from intruders;

(xiv) A description of an emergency response procedure in the event of an unusual occurrence;

(xv) An outline of the information program an applicant would initiate to explain its plans to the community and state;

(xvi) A description of site suitability characteristics and evidence that the applicant's proposed site for the facility meets those characteristics;

(xvii) Evidence of support from nearby Wyoming communities for exploring the project.

(d) If the legislature authorizes the siting of a facility under subsection (a) of this section, the department shall issue a permit incorporating the conditions presented to the legislature including the benefits agreement. The issuance of the permit is not appealable to the environmental quality council. The permit shall also include a provision for payment by the permittee of inspection and review costs unless such costs are included in the benefits agreement.

(e) The legislature hereby authorizes the siting of temporary high-level radioactive waste storage facilities within this state subject to the following:

(i) A facility shall only be authorized if it is operated on the site of and to store the waste produced by a nuclear power generation facility operating within the state;

(ii) The applicant for the facility shall otherwise comply with the requirements of this act;

(iii) The department shall review the application submitted pursuant to W.S. 35-11-1502 and determine specifically if the facility meets the safety considerations in paragraph (b)(iv) of this section and any other potential safety or environmental concerns;

(iv) After preparation of the report under W.S. 35-11-1503 and public review under W.S. 35-11-1504, the department may authorize siting and construction of the facility;

(v) If a facility is authorized by the department under paragraph (iv) of this subsection, the benefits agreement

shall be the agreement as negotiated with the applicant under W.S. 35-11-1503(d).

35-11-1507. Injunction proceedings; penalties.

(a) When, in the opinion of the governor, a person is violating or is about to violate any provision of this article, the governor shall direct the attorney general to apply to the appropriate court for an order enjoining the person from engaging or continuing to engage in the activity. Upon a showing that the person has engaged, or is about to engage in the activity, the court may grant a permanent or temporary injunction, restraining order or other order.

(b) In addition to being subject to injunctive relief any person convicted of violating any provision of this article may be imprisoned for up to one (1) year, fined up to ten thousand dollars ($10,000.00), or both.

ARTICLE 16
VOLUNTARY REMEDIATION OF CONTAMINATED SITES

35-11-1601. Applicability; nonvoluntary remediation.

(a) This article establishes the requirements and procedures necessary for voluntary remediation of eligible sites under this act, and shall not authorize unpermitted releases of contaminants to the environment of the state. Consistent with the policy and purpose of this act, this article shall provide incentive to remediate eligible sites and establish criteria for application of site-specific, risk-based remediation. All voluntary remediation requirements for eligible sites shall be performed in accordance with this article and shall be contained in a remedy agreement issued under W.S. 35-11-1607. Except as provided in subsection (d) of this section, no additional remediation requirements may be imposed by the department under this act for remediation of any site subject to a remedy agreement issued under W.S. 35-11-1607, unless the remedy agreement has been reopened or terminated under W.S. 35-11-1610. Nothing in this subsection shall prohibit the imposition of remediation requirements to address the release of a contaminant which may occur after a remedy agreement has been entered into or a no further action letter has been issued. Remediation authorized by the department under this article shall not be deemed a prohibited act under this act, or of any rules or regulations promulgated thereunder.

(b) Remediation is not voluntary under this article if it is required:

(i) By order of the department, council or by any court and entered without the consent of a person; or

(ii) By order of the department, council or by any court and entered without the consent of a person who has failed or refused to enter into, or breached the terms of, a preliminary remediation agreement, remedy agreement or reopened remedy agreement; or

(iii) By administrative or judicial order to which the United States environmental protection agency is a party, which is issued after the effective date of this act, on a site that has been determined not to be eligible under W.S. 35-11-1603.

(c) Sites that are not eligible for voluntary remediation are subject to all other applicable requirements of this act, including the provisions of W.S. 35-11-1613.

(d) Nothing herein shall relieve owners or operators of eligible sites from applicable permit requirements under this act or limit the director's ability to undertake enforcement action relating to a complaint under article 7 of this act and impose a penalty for violation of the act under article 9 of this act.

(e) Nothing in this article shall limit the director's authority to order any person to abate any condition that poses an imminent or substantial endangerment to human health or the environment, or the director's authority to issue emergency orders under W.S. 35-11-115.

35-11-1602. Eligibility for voluntary remediation program; sites eligible; sites ineligible.

(a) Eligible sites shall include sites which meet the following conditions:

(i) Sites, or portions of sites, where releases occurred before the effective date of this article and:

(A) The site, or portion of site, where the release occurred was not subject to the permit requirements of this act at the time of the release; or

(B) The site is covered by an order of the department, council or by any court and entered with the consent of the person or entity.

(ii) Sites, or portions of sites, where releases occurred on or after the effective date of this article and where the owner or operator is implementing a pollution prevention plan consistent with rules promulgated under this act;

(iii) Waste management or disposal units that have been permitted under this act and the director determines that the release from the permitted unit, if restricted or prohibited by the permit, cannot be remediated in accord with the permit requirements because of technical impracticability.

(b) Eligible sites shall not include:

(i) A site for which remediation is not voluntary under W.S. 35-11-1601(b);

(ii) A site that is listed on the National Priorities List of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §§ 9601-9675;

(iii) A commercial solid waste management facility, commercial waste incineration or disposal facility subject to W.S. 35-11-514;

(iv) Underground and aboveground storage tanks subject to article 14 of this act;

(v) Radioactive waste storage facilities subject to article 15 of this act;

(vi) Abandoned mine land sites subject to article 12 of this act; or

(vii) Any site where a release resulted from continuous or repeated violations of any law, rule, regulation or order under this act.

35-11-1603. Participation in the voluntary remediation program; application; time for determination.

To participate in the voluntary remediation program a person must submit an application to the department that identifies the owner and provides a location and description of the site. The application shall also describe the site-specific conditions which the applicant believes satisfy one (1) or more of the eligibility criteria of W.S. 35-11-1602. No later than forty-five (45) days after receipt of the application, the department shall give written notice to the applicant containing the department's determination of the site eligibility for participation in the voluntary remediation program.

35-11-1604. Public participation; notice; plan.

(a) Following any determination by the department that a site is an eligible site, or following the submission of any application to modify an existing remedy agreement, the owner or operator shall give written notice to all surface owners of record of land which is contiguous to the site, and to all known adjacent surface owners of record of land, and shall publish notice once per week for four (4) consecutive weeks in a newspaper of general circulation in the county in which the site is located. The notice published in a newspaper shall be a display advertisement. The notice to individual landowners and the notice published in a newspaper shall identify the site, provide a summary of the criterion in W.S. 35-11-1602 which makes the site eligible for participation in the voluntary remediation program under this article, describe the process for the public to request the development of a public participation plan under subsection (b) of this section, and provide a thirty (30) day period for the public to request that a public participation plan be developed.

(b) For any eligible site where there is significant public interest as determined by the director after considering the factors enumerated in paragraphs (i) through (iii) of this subsection, the person who has submitted an application for participation, or the owner of the site, shall prepare and implement a public participation plan which shall be approved by the director. In preparing the plan, the applicant or owner shall consult with and consider the public participation needs of interested parties, including but not limited to contiguous surface owners of record and all known adjacent surface owners of record of land, local government, local economic development agencies or groups, and public interest groups. In determining whether there is significant public interest, the director shall consider whether there have been responses to the notice

required under subsection (a) of this section requesting the development of a public participation plan by:

(i) At least twenty-five (25) individuals;

(ii) An organization representing at least twenty-five (25) individuals; or

(iii) The governing body of a local government.

(c) Any owner or operator of an eligible site which is also subject to permitting or corrective action requirements of the hazardous waste rules and regulations promulgated under W.S. 35-11-503(d) shall prepare and implement a public participation plan which complies with those rules and regulations.

(d) At a minimum for any eligible site regardless of whether a public participation plan has been required, prior to entering into a remedy agreement, the owner shall give written notice of the proposed remedy agreement to all surface owners of record of land adjacent to the site, and publish notice once per week for four (4) consecutive weeks in a newspaper of general circulation in the county in which the site is located. The notice shall be of a form and content prescribed by the department, and shall summarize the proposed remedy agreement, provide a description of the site, provide for a thirty (30) day public comment period after the date of the last publication, and provide an opportunity for an oral hearing. An oral hearing on the proposed remedy agreement shall be held if the department finds sufficient interest. The department may enter into a remedy agreement following the public comment period or any hearing, whichever is later.

35-11-1605. Voluntary remediation standards; site-specific, risk-based standards; considerations in choice of remedy; alternate standards for soil; alternate standards for soil or water; point of compliance; contamination from source not on site; alternate remediation standards for site contaminated from source not on site; supplemental requirements.

(a) Consistent with any requirements necessary to retain state primacy in federal programs, any remedy proposed by an owner of an eligible site, or considered by the director, shall:

(i) Be protective of human health, safety and the environment. A remedy shall be considered to be protective of human health if it reduces risk to human receptors of acute and

chronic toxic exposures to contaminants to levels that do not pose a significant risk to human health. A remedy shall be considered to be protective of the environment if it adequately reduces risk of significant adverse impacts to ecological receptors for which habitats have been identified on or near the site. Remedies may meet this requirement through a combination of monitored natural attenuation, removal, treatment, or engineering or institutional controls. Except as provided in subsection (d) of this section, any site where a remedy is proposed that includes engineering or institutional controls must also have been designated as a use control area in accord with W.S. 35-11-1609;

(ii) Attain standards established by the director under this subsection for air, soil, and water affected by the site, unless the director sets an alternate standard in accord with subsection (c) or (d) of this section. No standard set under this section for a contaminant shall be set at a level or concentration lower than the background level or concentration for that contaminant. A remedy must attain standards or alternate standards by the end of the remediation period set forth in the remedy agreement. A remedy shall be considered to attain standards for air, soil and water if it:

(A) Meets any applicable media standards established under federal or state law or rule or regulation; or

(B) Meets site-specific, risk-based standards developed for the eligible site. Site-specific, risk-based standards shall establish a risk reduction goal for contaminants which are known or suspected carcinogens to ensure that the excess upper bound lifetime cancer risk to any exposed individual may not exceed a probability of developing cancer of one in one million (1 in 1,000,000) to one in ten thousand (1 in 10,000). The one in one million (1 in 1,000,000) risk level shall be used as the point of departure for determining remediation goals for alternatives when individual contaminant standards are not available, or are not sufficiently protective because of the presence of multiple contaminants at a site or multiple pathways of exposures. Site-specific, risk-based standards must also require that for contaminants which are systemic toxicants, the hazard index must not exceed one (1). The director shall use residential exposure factors, giving consideration to children and the elderly, to establish site-specific, risk-based standards under this subsection for soils and air. The exposure factors to be used by the director to establish site-specific, risk-based standards under this

subsection for hazardous substances in groundwater shall assume that groundwater may be used as a drinking water source, provided that no standard set under this subsection for a contaminant shall be set at a level or concentration lower than the background level or concentration for that contaminant. For nonhazardous substances, the exposure factors to be used by the director shall assume uses consistent with the class of use prior to contamination of the groundwater.

(iii) Control any sources of releases so as to reduce or eliminate, to the extent technically practicable, further releases as required to protect human health and the environment. A remedy shall be considered to control sources of releases if it controls the release of contaminants from sources to any media in concentrations that exceed applicable standards set by the director under paragraph (a)(ii) of this section, or the soil standards under subsection (c) or (d) of this section; and

(iv) Comply with any applicable standard for management of wastes generated as a consequence of the remedy. A remedy shall be considered to comply with applicable standards for management of wastes if all wastes generated as a consequence of implementation of the remedy are treated, stored or disposed of in compliance with the requirements of this act.

(b) The director shall choose a remedy, or combination of remedies, from among those remedies which meet the requirements of subsection (a), (c) or (d) of this section, as applicable. In choosing a remedy, the director shall consider:

(i) The extent to which the remedy will be reliable and effective for the long term. For remedies that include engineering or institutional controls in accord with a use control area designation, the director shall consider the expected life cycle performance of any engineering controls, monitoring systems and institutional controls;

(ii) The extent to which the remedy results in a reduction of toxicity, mobility or volume of contaminants. The director shall consider the degree to which remedies incorporate treatment or removal of contaminants to lower long term risk to human health and the environment;

(iii) The short term effectiveness of the remedy. The director shall consider the time required for each remedy to attain standards for air, soil and water specified in paragraph

(a)(ii) or subsection (c) or (d) of this section, as applicable. A remedy involving monitored natural attenuation may be considered whether or not the director has made a determination of technical impracticability under subsection (d) of this section. Monitored natural attenuation shall be deemed effective if there is evidence that natural attenuation is occurring and will be completed within a reasonable time period;

(iv) Impacts which may be caused by implementation of the remedy. The director shall consider any adverse impacts which may be caused by a remedy, and shall take into consideration the gravity of any projected impact and the cost and availability of measures to mitigate the impact;

(v) The extent and nature of contamination and practicable capabilities of remedial technologies, and whether achieving standards is technically impracticable;

(vi) Reasonably anticipated future land uses or use restrictions in a use control area designation;

(vii) Consistency of remedies with the nature and complexities of releases of contaminants; and

(viii) Cost of the remedy. The director shall consider whether a remedy presents a substantial and disproportionately high cost for implementation and completion. The director shall compare the costs of remedies considering the degree of risk reduction that is afforded by each remedy. Costs considered shall include capital, operation and maintenance, engineering and institutional control costs and monitoring costs for the anticipated life of the remedy.

(c) The director may establish alternate site-specific, risk-based standards for surface and subsurface soils to be employed at a site in lieu of the soil standards in paragraph (a)(ii) of this section, for any site that is located within a use control area designated under W.S. 35-11-1609. A remedy that employs alternate standards established by the director under this subsection shall meet the requirements of this subsection and paragraphs (a)(i), (iii) and (iv) of this section. The alternate standards for such a site shall use the carcinogenic and systemic toxicant risk reduction goals of subparagraph (a)(ii)(B) of this section, except that the exposure assumptions used to calculate the alternate standards under this subsection shall be consistent with the use restrictions contained in the use control area designation. If the director establishes

alternate soil standards under this subsection, the owner or operator must evaluate technologies that can meet the alternate soil standards. Owners or operators of eligible sites that implement remedies which achieve the alternate soil standards set under this subsection may be issued a certificate of completion and covenant not to sue pursuant to W.S. 35-11-1607. The soil standards of paragraph (a)(ii) of this section must be met if the owner or operator applies to remove the use restrictions applicable to the site or to receive a no further action letter under W.S. 35-11-1608.

(d) The director may establish alternate site-specific, risk-based standards for soil or water to be employed at a site in lieu of the soil and water standards in paragraph (a)(ii) of this section if, after evaluation of currently available technology the director determines that it is technically impracticable to meet a standard at a specific site. A remedy that employs alternate standards established by the director under this subsection shall meet the requirements of this subsection and paragraphs (a)(i), (iii) and (iv) of this section. The technical impracticability determination shall include evaluation of the cost of remedy alternatives, including but not limited to, substantial and disproportionately high costs, present worth of construction, operation and maintenance costs, continued operational costs of the remedy selected and costs of any proposed alternative remedy strategies. Whenever the director sets an alternate standard, the director shall select a remedy capable of meeting the alternate standard and which is technically practicable, controls any sources of contamination to the extent technically practicable, and controls human and environmental exposures to contaminated air, soil or water. The director may establish alternate standards for soil or water under this subsection only if the owner has or obtains rights to control human or environmental exposures to contaminated media, and consents to impose such controls as are required to protect human health and the environment. Notwithstanding the provisions of paragraph (a)(i) of this section, or W.S. 35-11-1609 such controls may be imposed by the owner without the site receiving a use control area designation under W.S. 35-11-1609. The standards of paragraph (a)(ii) of this section must be met if the owner or operator applies to remove the use restrictions applicable to the site or to receive a no further action letter under W.S. 35-11-1608.

(e) When establishing standards under paragraph (a)(ii) or subsection (c) or (d) of this section, the director shall specify one (1) or more points of compliance where standards

must be achieved. In specifying a point of compliance, the director shall consider the following factors:

(i) Compliance with groundwater standards shall be monitored as close as reasonably practical to the contaminant source or site boundary or boundary of the use control area. The director shall select any groundwater point of compliance based upon the evaluation of the properties of the aquifer, the proximity of existing and reasonably anticipated points of groundwater withdrawal or discharge to the surface, the location of the contaminant plume relative to the site or use control area boundary, the toxicity of the contaminant, the presence and proximity of multiple contaminant sources, the exposure and likelihood of actual exposure to contaminated groundwater, and the technical practicability of groundwater remediation;

(ii) For soils, standards shall be met at locations determined to ensure protection of human health and identified environmental receptors, and protection of surface water, groundwater and air resulting from any potential transfer of contaminants from soils to these other media; and

(iii) For surface water, standards shall be met at the point where any release enters any surface water of the state consistent with applicable federal and state requirements. If sediments are affected by releases to surface water, a sediment point of compliance may also be established.

(f) Remediation standards for a site that has become contaminated by a release or migration of contamination from a source not located on the site shall be appropriate for any use control area designation applicable to such site, or if desired by the owner the remediation requirements shall be adequate to restore the site to all uses for which it was suitable prior to the contamination.

(g) The department may establish supplemental requirements for owners or operators of lands or facilities subject to permitting or corrective action requirements of the hazardous waste rules and regulations promulgated under W.S. 35-11-503(d) as may be necessary to ensure that such sites are characterized and remediated in a manner which is consistent with, equivalent to, and no less stringent [than] permitting, closure, post-closure and corrective action requirements contained in rules and regulations adopted by the United States Environmental Protection Agency (EPA) under authority of subtitle C of the Resource Conservation and Recovery Act, 42 U.S.C. § 6901, et

seq. Election by an eligible site owner or operator who is subject to such hazardous waste permitting or corrective action requirements to participate in the voluntary remediation program under this article shall not relieve the owner or operator of the duty to comply with all requirements of the hazardous waste rules and regulations promulgated under W.S. 35-11-503(d).

35-11-1606. Preliminary remediation agreement; contents.

(a) The preliminary remediation agreement shall contain the terms and conditions agreed to by the parties, which shall include the information and procedures required for completion of an environmental assessment or site characterization that is adequate and appropriate to support selection of a permanent or long term protective remedy for the site and adjacent property to meet the standards in W.S. 35-11-1605, and a work plan, schedule and statement of any criteria the department intends to use to evaluate work plans and reports.

(b) For any site that is determined by the director to have the potential for significant contamination, be located in an area where human exposures to contaminants are likely, or require evaluation of remedial alternatives as a condition for the state to maintain primacy in any federal program, the director shall require the site characterization plan within the preliminary remediation agreement under this section to include a description of alternative remedial actions to be evaluated and a plan for the collection of any data and site information needed to evaluate those alternative remedial actions. Not all potential remedies must be evaluated for a site. The director and the owner may enter into a single agreement containing both characterization and alternative remedial action evaluation plans, or may enter into an alternative remedial action evaluation agreement following completion of site characterization.

35-11-1607. Remedy agreement; prerequisite; contents; violation of agreement; changes to agreement; covenant not to sue; certificate of completion; recording; effect on orders or permits.

(a) Except as provided in W.S. 35-11-1605(d), before an owner and the department may enter into a remedy agreement that includes long-term restrictions on the use of the site, the owner must obtain a use control area designation for the site as set forth in W.S. 35-11-1609. The use restrictions contained in any use control area designation may be used by the director to

establish any alternate soil standard as provided in W.S. 35-11-1605(c).

(b) Any remedy agreement shall contain:

(i) A remedial action plan, including the remediation standards and objectives for the site or use control area, the remediation standards and objectives for adjacent property, a description of any engineering or institutional control, a schedule for the required remediation activities, and conditions for the effective and efficient implementation of the remedy agreement. The department shall require a suitable bond or other evidence of financial assurance to assure the performance and maintenance of engineering controls and any monitoring activities required in a remedy agreement; and

(ii) The reopeners or termination clauses set forth in W.S. 35-11-1610.

(c) The remedy and remediation standards for a site that are set forth in a remedy agreement shall be permanent, subject to the reopeners and termination clauses in W.S. 35-11-1610.

(d) Use restrictions, or other terms or conditions set forth in a remedy agreement shall run with the land and be binding upon successors in interest. If a term or condition of any remedy agreement, covenant not to sue, or certificate of completion requires the maintenance of a bond or other evidence of financial assurance, it shall be the duty of any successor in interest to maintain such bond or financial assurance.

(e) A violation of any use restriction, term or condition of a remedy agreement or certificate of completion shall be deemed a violation of this act, and the department may bring any action for such violation against the owner of the site at the time the violation occurs or against the person who violates the use restriction, term or condition of the remedy agreement or certificate of completion.

(f) No person shall change any engineering or institutional controls contained in a remedy agreement or certificate of completion without the prior written consent of the department. Before a change may be made, the department shall review the contamination at the site and any new requirements shall be incorporated into a subsequent remedy agreement or certificate of completion. Upon entry into a subsequent remedy agreement or certificate of completion or

issuance of a no further action letter, the director shall modify or terminate any prior remedy agreement or certificate of completion.

(g) Consistent with the reopeners and termination clauses in W.S. 35-11-1610, the department shall, upon request, provide the owner or prospective purchaser a covenant not to sue. Any covenant not to sue shall extend to subsequent owners.

(h) If the director determines that all remediation requirements for a site have been successfully implemented or satisfied, the department shall, upon request, provide the owner or prospective purchaser a certificate of completion.

(j) A person who receives a remedy agreement or certificate of completion under this section shall record a copy in the office of the county clerk with the deed for the site and shall file the copy in the office of the county clerk no later than ten (10) business days after the date the remedy agreement or certification of completion is signed.

(k) No remedy agreement for any site subject to a prior administrative or judicial order or permit which contains remedial requirements shall be effective until the order or permit has been modified to incorporate the terms of the remedy agreement. Modifications to orders or permits under this subsection shall be made using the procedures specified in the prior order or permit. Entry into a remedy agreement under this article shall not affect the duty of the site owner or operator to comply with any prior order or permit. Following modification of the order or permit as provided in this subsection, the owner shall comply with the modified order or permit.

35-11-1608. No further action letters; findings; natural attenuation.

(a) If the department determines that no further remediation is required on a site, the department shall, upon request, provide the owner or prospective purchaser a no further action letter, subject to reopener or termination as provided in W.S. 35-11-1610. The department may only issue a no further action letter upon a finding by the department that the site does not require engineering or institutional controls or use restrictions to meet the standards specified in W.S. 35-11-1605(a)(ii).

(b) When the department has determined that monitored natural attenuation over a reasonable period of time is appropriate and that no exposure to contaminated media is reasonably expected during the period of natural attenuation, the department shall, upon request, provide the owner or prospective purchaser a no further action letter. The no further action letter may require that the current use of the property continue during the period of natural attenuation and also may require that testing be conducted to confirm that standards are met.

35-11-1609. Use control areas; when establishment required; procedure; contents of petition; notice; failure of governmental entity to act; enforcement; exception.

(a) The owner of a site who proposes long-term restrictions on the use of the site shall petition to the appropriate governmental entity or entities for the creation of a use control area to establish long-term restrictions on the use of the site.

(b) A use control area may be created or modified only upon the petition of the owner of a site, and notice and public hearing as provided in subsection (d) of this section, and shall include only the site, unless adjacent property owners consent.

(c) The petition to establish a use control area shall contain data, information and any remedy options required in a preliminary remediation agreement under W.S. 35-11-1606.

(d) Upon submission of a petition for long term use restrictions, the governmental entity to whom the use area designation petition has been submitted shall cause the owner to give written notice of the petition to all surface owners of record of land contiguous to the site, and to publish notice of the petition and a public hearing once per week for four (4) consecutive weeks in a newspaper of general circulation in the county in which the site is located. The notice shall identify the property, generally describe the petition and proposed use restrictions, direct that comments may be submitted to the governmental entity or entities to whom the petition has been submitted, and provide the date, time and place of a public hearing. The public hearing shall be held no sooner than thirty (30) days after the first publication of the notice. After the public hearing has been held, the governing board, commission or council shall vote upon the creation of the use control area in accordance with applicable rules, regulations and procedures.

No use control area shall be created except upon petition of the owner and a majority vote of the appropriate board, commission or council.

(e) The governmental entity to whom the use control area petition has been submitted shall approve or deny an owner's petition for a use control area within one hundred eighty (180) days after the petition is received. The owner and a governmental entity may agree to extend the time period in which the governmental entity is to vote upon the petition. The governmental entity may, on a vote taken within one hundred eighty (180) days after the petition is received, condition its vote approving the petition upon the owner's subsequent filing of the determination by the director that a remedy can be selected that meets the requirements of W.S. 35-11-1605 and is consistent with owner's petition.

(f) The restrictions in a use control area are enforceable by the issuing governmental entity by injunction, mandamus or abatement, in addition to any other remedies provided by law.

(g) Except as provided in subsection (e), nothing in this section shall contravene or limit the authority of any county, city or town to regulate and control the property under their jurisdiction.

(h) The department shall not have the authority to require a governmental entity to adopt any zoning regulation or restriction applicable to a site as part of a remediation or response action or a remedy agreement.

(j) If the department has issued a no further action letter under W.S. 35-11-1608, then no use control area designation shall be required.

35-11-1610. Reopening or termination of remedy agreements, covenants not to sue, certificates of completion or no further action determinations; conditions; recording.

(a) The department may reopen a remedy agreement, covenant not to sue or certificate of completion at any time if:

(i) The current owner fails substantially to comply with the terms and conditions of the remedy agreement, covenant not to sue or certificate of completion;

(ii) An imminent and substantial endangerment to human health or the environment is discovered;

(iii) Contamination is discovered that was present on the site but was not known to the owner or the department on the date of the remedy agreement or when the department issued a covenant not to sue or certificate of completion; or

(iv) The remedy fails to meet the remediation objectives that are contained in the remedy agreement or certificate of completion.

(b) The department may reopen a no further action determination at any time if:

(i) An imminent and substantial endangerment to human health or the environment is discovered; or

(ii) The department determines that the monitored natural attenuation remedy under W.S. 35-11-1608(b) is not effective in meeting the standards for a no further action letter under this section.

(c) The department may terminate a remedy agreement, covenant not to sue, certificate of completion or no further action letter if it is discovered that any of these instruments were based on fraud, material misrepresentation or failure to disclose material information, or if an owner's willful violation of any use restriction results in harmful exposures of any toxic contaminant to any user or occupant of the site.

(d) If a remedy agreement, covenant not to sue, certificate of completion or no further action letter is reopened or terminated, the department shall record a notice of such action in the office of the county clerk with the deed for the site and shall file the notice in the office of the county clerk no later than ten (10) business days after the date of the remedy agreement, covenant not to sue, certificate of completion or no further action letter is reopened or terminated.

35-11-1611. Disputes; appeal.

If a person and the department are unable after good faith efforts to resolve a dispute arising under this article pursuant to the provisions of an agreement, the person may appeal the department's decision to the council.

35-11-1612. Fees; notice; appeal.

The department shall implement a fee system and schedule of fees which are applicable to the preliminary remediation agreements, remedy agreements, certificates of completion and no further action letters authorized under this article. Fees shall cover all reasonable direct and indirect costs of the department's participation in any activity authorized by this article. The department shall give written notice of the amount of the fee assessment. The owner of the eligible site may appeal the assessment to the council within forty-five (45) days of receipt.

35-11-1613. Remediation requirements for nonvoluntary sites.

(a) The remediation requirements for sites that do not participate in the voluntary remediation program in W.S. 35-11-1601 through 35-11-1612 may include, in the discretion of the director requirements which:

(i) Return contaminated soil and water to background contaminant levels;

(ii) Return contaminated soil to contaminant levels that are safe for any potential future use of the site;

(iii) Return contaminated groundwater to contaminant levels that ensure that the class of use of groundwater prior to the release is restored, or if not technically practicable, employs the best available groundwater remediation technology. No liability release shall be provided to the owner until the owner demonstrates that groundwater standards have been met;

(iv) Remove all continuing sources of soil or water contamination; and

(v) Eliminate to the extent practical any continuing risk to any ecological receptor present at or near the site.

ARTICLE 17
ORPHAN SITE REMEDIATION

35-11-1701. Orphan site remediation.

(a) The director may expend funds contained within the account under W.S. 35-11-424(a) for the purpose of remediation

of orphan sites and the performance of any other activity as defined in this article.

(b) As used in this section, orphan sites means:

(i) Sites where the department determines that there is no viable party that is responsible for causing or contributing to the contamination present at the site; and

(ii) Sites where the department has issued a no further action letter, and where there is a subsequent discovery of contamination which was present at the site when the no further action letter was issued but:

(A) Was not known to the site owner or the department at the time the no further action letter was issued, provided that a comprehensive and complete site characterization was conducted by the owner;

(B) Is not the result of activities conducted on the site after the no further action letter was issued; and

(C) Does not constitute an imminent or substantial endangerment to human health or the environment which is being addressed by the holder of the no further action letter pursuant to a reopening of the no further action letter under W.S. 35-11-1610(b).

(iii) Spill sites, where the department determines that the person responsible for the spill cannot be identified, or where the department must take prompt action to prevent hazards to human health or the environment at a site where a responsible party fails to act promptly.

(c) The department may expend funds from this account to conduct site evaluations and testing, evaluate remedial measures, select remediation requirements, and construct, install, maintain and operate systems to remedy contamination in accordance with a remediation work plan prescribed by the director for the orphan site.

(d) The department may also expend funds from this account to pay for the orphan share of any removal or remedial action taken pursuant to the Comprehensive Environmental Response, Control And Liability Act (42 U.S.C. 9601, et seq.), provided that:

(i) The department has participated in negotiations for, and concurs with, the orphan share allocation amount for the action; and

(ii) Each responsible party to an action has agreed not to seek cost recovery from less than de minimus contributors in exchange for the state assumption of the orphan share cost.

(e) Revenue to the account shall include such monies which may be deposited in the account for use in remediation of orphan sites. The liability of the state to fulfill the requirements of this section is limited to the amount of funds available in the account.

(f) The department shall project an annual funding need for the identification, characterization, prioritization and remediation of contaminated orphan sites within the state and shall recommend a funding source adequate to meet the identified funding need.

(g) In any case under paragraph (b)(iii) of this section where the department expends funds to remediate or contain contamination resulting from a spill, and where the department has identified a responsible party, the responsible party shall reimburse the department in an amount equal to three (3) times the expenditure from the account. The attorney general shall bring suit to recover the reimbursement amount required in this subsection where recovery is deemed possible.

ARTICLE 18
INNOCENT OWNERS

35-11-1801. Definition of innocent owner.

(a) "Innocent owner" means a person who did not cause or contribute to the source of contamination and who is one (1) of the following:

(i) An owner of real property that has become contaminated as a result of a release or migration of contaminants from a source not located on or at the real property;

(ii) An owner of real property who can show with respect to the property that the owner has no liability for contamination under section 107(a) of the Comprehensive Environmental Response, Compensation and Liability Act, 42

U.S.C. 9607(a), because the owner can show a defense as provided in section 107(b) of that act (42 U.S.C. 9607(b));

(iii) An owner of real property who at the time of becoming the owner of the property did not know or should not have reasonably known about the presence of contamination on the property;

(iv) A lender or fiduciary who owns or holds a security interest in land, unless the lender or fiduciary participated in the management of a site at the time that the owner or operator thereof caused a release or migration of contaminants;

(v) A unit of state or local government which acquired ownership or control through bankruptcy, tax delinquency, abandonment or other circumstances in which the government acquires title by virtue of its function as sovereign, unless the state or local government contributed to the contamination;

(vi) A bona fide prospective purchaser; or

(vii) A surface owner if the source of the contamination was a pipeline running under or across the land of the surface owner and the surface owner was not involved in the installation, operation or maintenance of the pipeline.

(b) No person who owns or operates lands or facilities subject to permitting or corrective action requirements of the hazardous waste rules and regulations promulgated under W.S. 35-11-503(d) shall be considered an innocent owner, nor shall any hazardous waste generator who may be subject to corrective action requirements of such rules and regulations be considered an innocent owner.

35-11-1802. Immunity for innocent owners.

(a) An innocent owner is not liable for investigation, monitoring, remediation or other response action regarding contamination attributable to a release, discharge or migration of contaminants on his property.

(b) To be eligible for immunity under this act, a person shall:

(i) Grant to the department or to a person designated by the department, reasonable access to the land for purposes of investigation, monitoring or remediation;

(ii) Comply with any requirements established by the department that are necessary to maintain state authorization to implement federal regulatory programs;

(iii) Not use the real property in a manner that causes exposure of the public to harmful environmental conditions; and

(iv) Comply with any engineering or institutional controls applicable to the real property.

35-11-1803. Limitations.

(a) Any person who knowingly transfers, conveys or obtains an interest in land to avoid liability for contamination, remediation or compliance with any provision of this act shall not be an innocent owner.

(b) Notwithstanding the provisions of W.S. 35-11-1802, an innocent owner who undertakes a cleanup of his property must comply with all applicable provisions of this act.

ARTICLE 19
INTEGRATED SOLID WASTE PLANNING

35-11-1901. Purpose.

The purpose of this article is to establish a process for local governmental entities to prepare and maintain approved integrated solid waste management plans.

35-11-1902. Integrated solid waste management plans.

(a) Each local governmental entity shall prepare and maintain an integrated solid waste management plan describing management of solid waste generated within its jurisdiction or shall participate in a multi-jurisdictional integrated solid waste management plan.

(b) Integrated solid waste management plans shall be completed and submitted to the department by July 1, 2009, and shall be reviewed, revised as necessary and resubmitted to the department every ten (10) years thereafter.

(c) For the purposes of this article, the local governmental entity responsible for preparing an integrated solid waste management plan shall be the permitted operator of the solid waste disposal facility serving the planning area provided, however, that for any planning area where the permitted operator is a nongovernmental entity, the local government entity responsible for preparing a plan under this subsection shall be the county. Upon mutual written agreement, a local governmental entity may prepare an integrated solid waste management plan for another local governmental entity.

(d) The planning requirements of subsections (a) and (b) of this section shall be contingent upon the legislature making at least one million three hundred thousand dollars ($1,300,000.00) available to the department for grants to assist local governmental entities in the preparation of integrated solid waste management plans.

35-11-1903. Recommendations for integrated solid waste management planning areas.

By July 31, 2006, the department shall assess the patterns of generation of municipal solid waste within the state and issue a report identifying those areas of the state where integrated solid waste management plans may be prepared by local governmental entities. The identification of planning areas shall be considered guidance to local governmental entities. Local governmental entities shall not be required to adhere to any planning area boundaries identified by the department.

35-11-1904. Integrated solid waste management plan content; department approval.

(a) Integrated solid waste management plans shall address a period of not less than twenty (20) years and shall contain the following information:

(i) A description of the planning area covered by the integrated waste management plan and the names of all local governmental entities participating in the plan, including a copy of each governing body’s resolution adopting the plan;

(ii) An evaluation of current and projected volumes for all major waste types within the planning area, including a discussion of expected population growth and development patterns;

(iii) An evaluation of reasonable alternate solid waste management services, a description of the selected procedures, facilities and systems for solid waste collection, transfer, treatment, storage and information about how the procedures, facilities and systems are to be funded;

(iv) A discussion of how the plan shall be implemented, including public participation, public education and information strategies which may include, but are not limited to, citizen advisory committees and public meetings during the preparation, maintenance and implementation of the plan;

(v) Objectives for solid waste management within the jurisdiction, including but not limited to:

(A) Waste diversion, reduction, reuse, recycling or composting;

(B) Waste collection and transportation;

(C) Improving and maintaining waste management systems;

(D) Household hazardous waste management; and

(E) Special waste management.

(vi) An economic analysis of the total cost of alternatives and final systems selected by the participating local governmental entities to achieve the plan’s objectives, including capital and operating costs; and

(vii) Elements including:

(A) Strategies to meet each identified objective;

(B) A schedule for implementation; and

(C) Any financial or other incentives offered to residents to encourage participation in local recycling programs.

(b) Each plan shall be submitted for public review prior to submission to the department. The plan submission shall

include a statement describing public comments received and how the public comments were addressed. The department shall review each plan for completeness. If the department determines that the plan is not complete, the department shall provide a written statement identifying the elements of subsection (a) of this section which are not included in the plan. Upon addressing the incomplete elements, a local governmental entity may resubmit the plan for subsequent review by the department.

ARTICLE 20
NUCLEAR REGULATORY AGREEMENT

35-11-2001. Authorization to negotiate transfer of certain nuclear regulatory functions to the state; scope of regulated material.

(a) The governor, on behalf of the state, is authorized to contact the nuclear regulatory commission to express the intent of the state of Wyoming to enter into an agreement under section 274 of the Atomic Energy Act of 1954, 42 U.S.C. § 2021, as amended, with the nuclear regulatory commission providing for the assumption by the state of regulatory authority over source material involved in uranium or thorium recovery or milling and byproduct material, as defined in section 11e.(2) of the Atomic Energy Act of 1954, 42 U.S.C. § 2014(e)(2), as amended. The nuclear regulatory commission shall maintain regulatory authority over all other source material, section 11e.(1), (3) and (4) byproduct material and special nuclear material as defined in the Atomic Energy Act of 1954, 42 U.S.C. § 2014, as amended, and the activities reserved under section 274 of the Atomic Energy Act of 1954, 42 U.S.C. § 2021, as amended.

(b) The department shall serve as the lead agency for the regulation of source material involved in uranium or thorium recovery or milling and the associated byproduct material. The department is authorized to enforce the requirements of the Atomic Energy Act of 1954, 42 U.S.C. § 2011 et seq., as amended, under the agreement reached between the state and the nuclear regulatory commission as provided in section 274 of the Atomic Energy Act of 1954, 42 U.S.C. § 2021, as amended.

(c) The governor, through the department, is authorized to negotiate all aspects of a potential agreement under this section between the state of Wyoming and the nuclear regulatory commission. The governor is authorized to enter into a final agreement with the nuclear regulatory commission for the

regulation of source material involved in uranium or thorium recovery or milling and the associated byproduct material.

(d) Repealed by Laws 2016, ch. 7, § 3.

(e) The categories of materials governed by this article, as agreed upon by the nuclear regulatory commission and the state, are source material involved in uranium or thorium recovery or milling and the associated byproduct material, as defined in section 11e.(2) of the Atomic Energy Act of 1954, 42 U.S.C. § 2014(e)(2), as amended. This article does not govern independent or commercial laboratory facilities that possess, use or accept byproduct material. The nuclear regulatory commission shall retain regulatory authority over independent or commercial laboratory facilities.

35-11-2002. Authority of department to enforce article; rulemaking.

(a) Except as provided in this act, no person shall acquire, own, possess, transfer, offer or receive for transport or use any source material involved in uranium or thorium recovery or milling and the associated byproduct material without having been granted a license therefore from the department or the nuclear regulatory commission. The department is authorized to regulate and penalize any unlicensed activities involving source material involved in uranium or thorium recovery or milling and the associated byproduct material.

(b) The council, upon recommendation from the director, is authorized to promulgate rules and regulations necessary to effectuate the purpose of this article.

(c) To the extent it is not inconsistent with the provisions of this article, article 4 of this chapter shall apply to all licenses issued and actions taken under this article.

35-11-2003. Licensure; license requirements; enforcement actions.

(a) The director is authorized to issue licenses to implement the requirements of the Atomic Energy Act of 1954, 42 U.S.C. § 2011 et seq., as amended. Licenses issued under this section shall also authorize the possession and use of source materials involved in uranium or thorium recovery or milling and the associated byproduct material as provided in this article.

The director is further authorized to enforce license provisions in accordance with this article. The department shall recognize existing and effective licenses issued by the nuclear regulatory commission. The department shall also recognize licenses issued by other agreement states only for source material involved in uranium or thorium recovery or milling or the associated byproduct material.

(b) The director is authorized to use license conditions to address matters specific to particular licensees. The department may impose additional license conditions when required to protect public health and safety.

(c) The director shall grant an exemption from a license requirement, including an exemption from the requirement to obtain a license, if the exemption provides adequate protection of public health and safety and is compatible with nuclear regulatory commission requirements.

(d) The department shall inspect a licensee's operation to ensure compliance with license conditions, as determined necessary by the administrator of the land quality division to protect public health and safety. The department shall also inspect proposed facilities and proposed expansion of existing facilities to ensure that unauthorized construction is not occurring. Licensees, permittees and applicants for a license or permit shall obtain and grant the department access to inspect their facilities, source material involved in uranium or thorium recovery or milling and the associated byproduct material at such times and frequencies as determined necessary by the department to protect public health and safety.

(e) When issuing a license for byproduct material under this article, the director shall require licensees to provide an approved financial assurance arrangement consistent with nuclear regulatory commission requirements provided in 10 C.F.R. part 40, appendix A, as amended. The arrangement shall cover the cost estimate and the payment of the charge for decommissioning, long term surveillance and control pursuant to 10 C.F.R. part 40, appendix A.

(f) The director is authorized to suspend licenses, impound source material involved in uranium or thorium recovery or milling and the associated byproduct material and conduct enforcement actions in accordance with this article, article 9 of this chapter and rules and regulations promulgated under this act. The director is authorized to suspend licenses and conduct

enforcement actions in accordance with department rules and regulations and this article. In cases of an imminent threat to public health and safety, the director is authorized to issue an emergency order immediately suspending a license and any associated activity as provided in W.S. 35-11-115. The director is authorized to suspend or revoke a license for repeated or continued noncompliance with program requirements pursuant to its rules and regulations and this article. The director is also authorized to seek injunctive relief and impose civil or administrative monetary penalties as provided by law.

35-11-2004. License conditions; termination of licenses.

(a) The department shall prescribe conditions in licenses issued, renewed or amended for an activity that results in production of byproduct material to minimize or, if possible, eliminate the need for long-term maintenance and monitoring before the termination of the license.

(b) Prior to terminating any license the administrator of the land quality division shall obtain a determination from the nuclear regulatory commission that the licensee has complied with the commission's decontamination, decommissioning, disposal and reclamation standards.

(c) Prior to terminating a byproduct material license the department shall ensure the ownership of a disposal site and the byproduct material resulting from licensed activity are transferred to:

(i) The state of Wyoming; or

(ii) The federal government if the state declines to acquire the site, the byproduct material, or both the site and the byproduct material.

(d) Upon the transfer of a disposal site or the byproduct material resulting from licensed activity to the federal government, funds collected for decommissioning and long-term surveillance shall also be transferred to the federal government.

35-11-2005. Fees.

(a) The department shall adopt a fee structure which accounts for the full cost of the program, including positions

authorized by this article and other positions assessed to implement the program developed under this article.

(b) The department may assess fees for the regulation of source material under article 4 of this chapter, including but not limited to the review and processing of mining permit applications.

Appendix B to Subsection 4.1.1 Article 20 of the Environmental Quality Act WDEQ Uranium Recovery Program

Department of Environmental Quality

WYOMING

ARTICLE 20
NUCLEAR REGULATORY AGREEMENT

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(b) The department shall serve as the lead agency for the regulation of source material involved in uranium or thorium recovery or milling and the associated byproduct material. The department is authorized to enforce the requirements of the Atomic Energy Act of 1954, 42 U.S.C. § 2011 et seq., as amended, under the agreement reached between the state and the nuclear regulatory commission as provided in section 274 of the Atomic Energy Act of 1954, 42 U.S.C. § 2021, as amended.

(c) The governor, through the department, is authorized to negotiate all aspects of a potential agreement under this section between the state of Wyoming and the nuclear regulatory commission. The governor is authorized to enter into a final agreement with the nuclear regulatory commission for the regulation of source material involved in uranium or thorium recovery or milling and the associated byproduct material.

(d) Repealed by Laws 2016, ch. 7, § 3.

(e) The categories of materials governed by this article, as agreed upon by the nuclear regulatory commission and the state, are source material involved in uranium or thorium recovery or milling and the associated byproduct material, as defined in section 11e.(2) of the Atomic Energy Act of 1954, 42

U.S.C. § 2014(e)(2), as amended. This article does not govern independent or commercial laboratory facilities that possess, use or accept byproduct material. The nuclear regulatory commission shall retain regulatory authority over independent or commercial laboratory facilities.

35-11-2002. Authority of department to enforce article; rulemaking.

(a) Except as provided in this act, no person shall acquire, own, possess, transfer, offer or receive for transport or use any source material involved in uranium or thorium recovery or milling and the associated byproduct material without having been granted a license therefore from the department or the nuclear regulatory commission. The department is authorized to regulate and penalize any unlicensed activities involving source material involved in uranium or thorium recovery or milling and the associated byproduct material.

(b) The council, upon recommendation from the director, is authorized to promulgate rules and regulations necessary to effectuate the purpose of this article.

(c) To the extent it is not inconsistent with the provisions of this article, article 4 of this chapter shall apply to all licenses issued and actions taken under this article.

35-11-2003. Licensure; license requirements; enforcement actions.

(a) The director is authorized to issue licenses to implement the requirements of the Atomic Energy Act of 1954, 42 U.S.C. § 2011 et seq., as amended. Licenses issued under this section shall also authorize the possession and use of source materials involved in uranium or thorium recovery or milling and the associated byproduct material as provided in this article. The director is further authorized to enforce license provisions in accordance with this article. The department shall recognize existing and effective licenses issued by the nuclear regulatory commission. The department shall also recognize licenses issued by other agreement states only for source material involved in uranium or thorium recovery or milling or the associated byproduct material.

(b) The director is authorized to use license conditions to address matters specific to particular licensees. The

department may impose additional license conditions when required to protect public health and safety.

(c) The director shall grant an exemption from a license requirement, including an exemption from the requirement to obtain a license, if the exemption provides adequate protection of public health and safety and is compatible with nuclear regulatory commission requirements.

(d) The department shall inspect a licensee's operation to ensure compliance with license conditions, as determined necessary by the administrator of the land quality division to protect public health and safety. The department shall also inspect proposed facilities and proposed expansion of existing facilities to ensure that unauthorized construction is not occurring. Licensees, permittees and applicants for a license or permit shall obtain and grant the department access to inspect their facilities, source material involved in uranium or thorium recovery or milling and the associated byproduct material at such times and frequencies as determined necessary by the department to protect public health and safety.

(e) When issuing a license for byproduct material under this article, the director shall require licensees to provide an approved financial assurance arrangement consistent with nuclear regulatory commission requirements provided in 10 C.F.R. part 40, appendix A, as amended. The arrangement shall cover the cost estimate and the payment of the charge for decommissioning, long term surveillance and control pursuant to 10 C.F.R. part 40, appendix A.

(f) The director is authorized to suspend licenses, impound source material involved in uranium or thorium recovery or milling and the associated byproduct material and conduct enforcement actions in accordance with this article, article 9 of this chapter and rules and regulations promulgated under this act. The director is authorized to suspend licenses and conduct enforcement actions in accordance with department rules and regulations and this article. In cases of an imminent threat to public health and safety, the director is authorized to issue an emergency order immediately suspending a license and any associated activity as provided in W.S. 35-11-115. The director is authorized to suspend or revoke a license for repeated or continued noncompliance with program requirements pursuant to its rules and regulations and this article. The director is also authorized to seek injunctive relief and impose civil or administrative monetary penalties as provided by law.

35-11-2004. License conditions; termination of licenses.

(a) The department shall prescribe conditions in licenses issued, renewed or amended for an activity that results in production of byproduct material to minimize or, if possible, eliminate the need for long-term maintenance and monitoring before the termination of the license.

(b) Prior to terminating any license the administrator of the land quality division shall obtain a determination from the nuclear regulatory commission that the licensee has complied with the commission's decontamination, decommissioning, disposal and reclamation standards.

(c) Prior to terminating a byproduct material license the department shall ensure the ownership of a disposal site and the byproduct material resulting from licensed activity are transferred to:

(i) The state of Wyoming; or

(ii) The federal government if the state declines to acquire the site, the byproduct material, or both the site and the byproduct material.

(d) Upon the transfer of a disposal site or the byproduct material resulting from licensed activity to the federal government, funds collected for decommissioning and long-term surveillance shall also be transferred to the federal government.

35-11-2005. Fees.

(a) The department shall adopt a fee structure which accounts for the full cost of the program, including positions authorized by this article and other positions assessed to implement the program developed under this article.

(b) The department may assess fees for the regulation of source material under article 4 of this chapter, including but not limited to the review and processing of mining permit applications

Appendix C to Subsection 4.1.1 Wyoming Government Ethics and Disclosure Act

Department of Environmental Quality

WYOMING

TITLE 9
ADMINISTRATION OF THE GOVERNMENT

CHAPTER 13
GOVERNMENT ETHICS

ARTICLE 1
PUBLIC OFFICIALS, MEMBERS AND EMPLOYEES ETHICS

9-13-101. Short title.

This article shall be known and may be cited as the Ethics and Disclosure Act.

9-13-102. Definitions.

(a) As used in this article:

(i) "Anything of value" means:

(A) A pecuniary item, including money or a bank bill or note;

(B) A promissory note, bill of exchange, order, draft, warrant, check or bond given for the payment of money;

(C) A contract, agreement, promise or other obligation for an advance, conveyance, forgiveness of indebtedness, deposit, distribution, loan, payment, gift, pledge or transfer of money;

(D) A stock, bond, note or other investment interest in an entity;

(E) A right in action;

(F) A gift, tangible good, chattel or an interest in a gift, tangible good or chattel;

(G) A work of art, antique or collectible;

(H) An automobile or other means of personal transportation;

(J) Real property or an interest in real property, including title to realty, a fee simple or partial

interest, present or future, contingent or vested within realty, a leasehold interest or other beneficial interest in realty;

(K) An honorarium or compensation for services arising out of the person's service as a public official, public member or public employee;

(M) The sale or trade of anything of value:

(I) For reasonable consideration that would ordinarily not be available to a member of the public; or

(II) With a rebate or at a discount in its price, unless the rebate or discount is made in the ordinary course of business to a member of the public, or any group or category thereof, but without regard to that person's status as a public official, public member or public employee.

(N) A promise or offer of employment;

(O) Any other thing of value that is pecuniary or compensatory in value to a person.

(ii) "Anything of value" does not mean a campaign contribution properly received and reported, if reportable, as required under the Wyoming Election Code;

(iii) "Compensation" includes:

(A) An advance, conveyance, forgiveness of indebtedness, deposit, distribution, loan, payment, gift, pledge or transfer of money or anything of value; or

(B) A contract, agreement, promise or other obligation for an advance, conveyance, forgiveness of indebtedness, deposit, distribution, loan, payment, gift, pledge or transfer of money or anything of value, for services rendered or to be rendered.

(iv) "Compensation" does not include:

(A) Reimbursement of expenses if the reimbursement does not exceed the amount actually expended for the expenses, and if the reimbursement is substantiated by an itemization of expenses; or

(B) Per diem payments or mileage allowances paid by the employing government entity in accordance with applicable law.

(v) "Family member" means an individual:

(A) Who is the spouse, parent, sibling, child, grandparent or grandchild; or

(B) Is a member of the individual's household.

(vi) "Gift" means anything of value to the extent that consideration of equal or greater value is not received, but excludes the following:

(A) Printed informational, educational or promotional material;

(B) A gift that:

(I) Is not used; and

(II) No later than thirty (30) days after receipt, is returned to the donor or delivered to a charitable organization and is not claimed as a charitable contribution for federal income tax purposes.

(C) A gift, devise or inheritance from any of the following, if the donor is not acting as the agent or intermediary for someone other than a person covered by this subparagraph:

(I) An individual's spouse;

(II) An individual's child, parent, grandparent, brother, sister, parent-in-law, brother-in-law, sister-in-law, nephew, niece, aunt, uncle or first cousin;

(III) The spouse of any individual listed in subdivision (II) of this subparagraph;

(IV) Any person, including an organization, which has a bona fide social or private business relationship with the individual, where the circumstances demonstrate that the motivation for the gift arises out of that relationship and not from the recipient's holding of public office or employment. For the purposes of this subdivision, relevant circumstances

include but are not limited to the source of funds used by the donor to acquire the gift;

(V) Any person, including an organization, where the gift does result from the person's holding an office or position, but where the gift is of nominal value, is made voluntarily by the donor and is made in recognition of a special occasion, such as marriage, illness or retirement.

(D) A certificate, commemorative token or item, or plaque with a value that does not exceed two hundred fifty dollars ($250.00);

(E) Food and beverage;

(F) Compensation, per diem or other payments or benefits which the public official, public member or public employee receives in the performance of services for the governmental entity;

(G) Repealed By Laws 1999, ch. 140, § 2.

(H) Any loan, gift, gratuity, special discount or hospitality with a value of two hundred fifty dollars ($250.00) or less; or

(J) Travel, registration and lodging for any conference or meeting while attending in his official capacity as a public official, public member or public employee.

(vii) "Local office" means the offices of county commissioner, county treasurer, county assessor, county clerk, county sheriff, county coroner, district attorney, county attorney, mayor and member of the council of a municipality, member of the board of trustees of a community college district or a school district and member of a joint powers board or special district. As used in this paragraph "special district" means any special district specified under W.S. 22-29-103(a) and any other corporate district authorized to be formed as a political subdivision under the laws of this state;

(viii) "Negotiating" or "negotiate for employment" means a communication, directly or indirectly, with a prospective employer to discuss rendering services for compensation to that prospective employer;

(ix) "Negotiation for employment" means the period that begins with a communication to a prospective employer to discuss rendering services for compensation to the prospective employer;

(x) "Official responsibility or official capacity" means the direct administrative or operating authority, whether intermediate or final, and either exercisable alone or with others, and either personally or through subordinates, to approve, disapprove, or otherwise direct government action;

(xi) "Participation" includes decision, approval, disapproval or vote;

(xii) "Public employee" means any of the following state employees:

(A) The attorney general and the director of any department of the executive branch appointed by the governor under W.S. 9-2-1706, or the director of any legislative agency;

(B) The chief executive officer of any separate operating agency under W.S. 9-2-1704(d), except those listed in paragraphs (d)(vi) and (x) of that section;

(C) To the extent the incumbent in the position serves at the pleasure of persons listed in subparagraphs (A) and (B) of this section, administrators of department or agency divisions, and deputy directors of departments;

(D) Commissioners of the public service commission and members of the state board of equalization;

(E) Deputies and administrators of divisions within the offices of state elected officials under W.S. 9-2-1704(a). The positions, in the governor's office, of chief of staff, attorney for intergovernmental affairs and chief of policy are included within this subparagraph.

(xiii) "Public member" means a member appointed to a part-time position on a state board, commission or council. A public member does not lose this status by receiving reimbursement of expenses or a per diem payment for services. The term includes a member of the board of trustees of the University of Wyoming and the community college commission. The term does not include a public member of an advisory board, advisory commission or advisory council;

(xiv) "Public official" means an individual elected to a state or local office, or an individual who is appointed to fill a vacancy in a state or local office, whether or not the individual has yet assumed the office;

(xv) "State entity" means a state agency, office, department, division, bureau, board, commission or council, including the legislature, Wyoming community development authority and Wyoming science, technology and energy authority. The term does not include a court or an agency in the judicial branch;

(xvi) "State office" means the state offices of governor, treasurer, superintendent of public instruction, auditor, secretary of state and member of the state legislature;

(xvii) "This act" means W.S. 9-13-101 through 9-13-109.

9-13-103. Use of title and prestige of public office.

(a) No public official, public member or public employee shall use his office or position for his private benefit.

(b) As used in this section, "private benefit" means the receipt by the public official, public member or public employee of a gift which resulted from his holding that office.

9-13-104. Nepotism.

(a) No public official, public member or public employee shall advocate or cause the employment, appointment, promotion, transfer or advancement of a family member to an office or position of the state, a county, municipality or a school district. A public official, public member or public employee shall not supervise or manage a family member who is in an office or position of the state, a county, municipality or school district.

(b) A public official, public member or public employee, acting in his official capacity, shall not participate in his official responsibility or capacity regarding a matter relating to the employment or discipline of a family member.

9-13-105. Misuse of office.

(a) A public official, public member or public employee shall not use public funds, time, personnel, facilities or equipment for his private benefit or that of another unless the use is authorized by law.

(b) A public official, public member or public employee shall not use public funds, time, personnel, facilities or equipment for political or campaign activity unless the use is:

(i) Authorized by law; or

(ii) Properly incidental to another activity required or authorized by law and the public official, public employee or public member allocates and reimburses the governmental entity for any additional costs incurred for that portion of the activity not required or authorized by law.

(c) A public official, public employee or public member shall not disseminate to another person official information which the public official, public employee or public member obtains through or in connection with his position, unless the information is available to the general public or unless the dissemination is authorized by law.

9-13-106. Official decisions and votes.

(a) A public official, public member or public employee shall not make an official decision or vote on an official decision if the public official, public member or public employee has a personal or private interest in the matter. In determining whether he has a personal or private interest in a matter the public official shall recognize the importance of his right to represent his constituency and shall abstain from voting only in clear cases of a personal or private interest as defined in this subsection. A public official or public member shall not vote to give money or any direct financial benefit to himself except for tax reductions affecting the general public. For the purposes of this section, a personal or private interest:

(i) Is, with respect to the public official, public employee or public member, an interest which is direct and immediate as opposed to speculative and remote; and

(ii) Is an interest that provides the public official, public employee or public member, a greater benefit or

a lesser detriment than it does for a large or substantial group or class of persons who are similarly situated.

(b) A public official, public member or public employee described by subsection (a) of this section shall abstain from voting on the decision and from making any official decision in the matter. The public official's, public member's or public employee's abstention from voting must be recorded in the governmental entity's official records.

(c) This section shall not be construed to supersede W.S. 15-9-220, 16-6-118 or 16-9-203(f). Those provisions shall control to the extent inconsistent with this section.

9-13-107. Actions taken while negotiating for employment.

A public official, public member or public employee may not vote or take an official action in a matter affecting a person with whom the public official, public member or public employee is negotiating for prospective employment.

9-13-108. Disclosure required.

(a) Not later than January 31 annually, each of the state's five (5) elected officials and each member of the Wyoming legislature shall file a financial disclosure form with the secretary of state. The form shall be signed by the elected official or legislator filing it and under a certification that it is accurate. The financial disclosure form shall contain the following information current as of January 15 of that year:

(i) A list of all offices, directorships and salaried employment held by the person filing the form in any business enterprise, but excluding offices and directorships in a nonprofit corporation where no compensation is received for service;

(ii) A list generally describing the sources of, but not the amount of, the member's income.

(b) Forms may be submitted by facsimile transmission under the same terms and conditions specified for campaign reports under W.S. 22-25-106. For the purposes of this section, "salaried employment" means an employment relationship under which the employee is compensated, at least in part, by payment of a specified dollar amount for each month, or longer period, of service.

(c) The disclosure form shall be as prescribed by the secretary of state but in substantially the following form:

"State Elected Official Financial Disclosure Form

Name of Official:

Office held:

Business address:

Business phone number:

Home address:

Home phone number:

I. Offices, directorships and employment

a. Offices held in business enterprises (includes partnerships)

Office	Name and address of business enterprise

b. Directorships held in business enterprises

	Name and address of business enterprise

c. Salaried employment

Job Title	Name and address of business enterprise

II. Sources of income

a. Employment	Name and address of Employer
b. Business interests	Name and address of all business entities but excluding interests if less than ten percent (10%) of the entity is owned, or sole proprietorship from which income is earned, or describe generally
c. Investments	Income earned
	Yes No

i. Any security or

interest earnings ___ ___

ii. Real estate,

leases, royalties ___ ___

d. Other (Describe generally)".

9-13-109. Penalties.

(a) Any person who violates this act is guilty of a misdemeanor punishable upon conviction by a fine of not more than one thousand dollars ($1,000.00).

(b) Violation of any provision of this act constitutes sufficient cause for termination of a public employee's employment or for removal of a public official or public member from his office or position.

(c) If any action is prohibited both by this act and any provision of title 6, the provisions of this act shall not apply and the provisions of title 6 shall apply.

Appendix D to Subsection 4.1.1 Wyoming Administrative Procedure Act

Department of Environmental Quality

WYOMING

TITLE 16
CITY, COUNTY, STATE AND LOCAL POWERS

CHAPTER 3
ADMINISTRATIVE PROCEDURE

16-3-101. Short title; definitions.

(a) This act may be cited as the "Wyoming Administrative Procedure Act".

(b) As used in this act:

(i) "Agency" means any authority, bureau, board, commission, department, division, officer or employee of the state, a county, city or town or other political subdivision of the state, except the governing body of a city or town, the state legislature, the University of Wyoming and the judiciary;

(ii) "Contested case" means a proceeding including but not restricted to ratemaking, price fixing and licensing, in which legal rights, duties or privileges of a party are required by law to be determined by an agency after an opportunity for hearing but excludes designations under W.S. 9-2-1022(h)(i);

(iii) "License" includes the whole or part of any agency permit, certificate, approval, registration, charter or similar form of permission required by law, but it does not include a license required solely for revenue purposes;

(iv) "Licensing" includes the agency process respecting the grant, denial, renewal, revocation, suspension, annulment, withdrawal or amendment of a license;

(v) "Local agency" means any agency with responsibilities limited to less than statewide jurisdiction, except the governing body of a city or town;

(vi) "Party" means each person or agency named or admitted as a party or properly seeking and entitled as of right to be admitted as a party;

(vii) "Person" means any individual, partnership, corporation, association, municipality, governmental subdivision or public or private organization of any character other than an agency;

(viii) "Registrar of rules" for state agency rules means the secretary of state. "Registrar of rules" for local agency rules means the county clerk of the county in which the rule is to be effective;

(ix) "Rule" means each agency statement of general applicability that implements, interprets and prescribes law, policy or ordinances of cities and towns, or describes the organization, procedures, or practice requirements of any agency. The term includes the amendment or repeal of a prior rule, but does not include:

(A) Statements concerning only the internal management of an agency and not affecting private rights or procedures available to the public; or

(B) Rulings issued pursuant to W.S. 16-3-106; or

(C) Intraagency memoranda; or

(D) Agency decisions and findings in contested cases; or

(E) Rules concerning the use of public roads or facilities which are indicated to the public by means of signs and signals; or

(F) Ordinances of cities and towns; or

(G) Designations under W.S. 9-2-1022(h)(i); or

(H) A general permit.

(x) "State agency" means any agency with statewide responsibilities;

(xi) "General permit" means a permit issued by the department of environmental quality which authorizes a category or categories of discharges or emissions;

(xii) "Internet" means as defined in W.S. 9-2-1035(a)(iii);

(xiii) "This act" means W.S. 16-3-101 through 16-3-115.

16-3-102. General rulemaking requirements; assistance and authority of attorney general.

(a) In addition to other rulemaking requirements imposed by law, each agency shall:

(i) Adopt rules of practice setting forth the nature and requirements of all formal and informal procedures available in connection with contested cases;

(ii) Make available for public inspection all rules and all other written statements of policy or interpretations formulated, adopted or used by the agency in the discharge of its functions;

(iii) Make available for public inspection all final orders, decisions and opinions.

(b) No agency rule, order or decision is valid or effective against any person or party, nor may it be invoked by the agency for any purpose, until it has been filed with the registrar of rules and made available for public inspection as required by this act. This subsection does not apply to orders or decisions in favor of any person or party with actual knowledge of the rule, order or decision.

(c) In formulating rules of practice as required by this section, each agency may request the assistance of the attorney general and upon request the attorney general shall assist the agency or agencies in the preparation of rules of practice.

(d) The office of administrative hearings shall adopt uniform rules for the use of state agencies setting forth the nature and requirements of all formal and informal procedures available in connection with contested cases.

(e) The attorney general may repeal administrative rules of a state agency in accordance with this act if the rules have become obsolete and no other existing agency has authority to repeal the rules.

16-3-103. Adoption, amendment and repeal of rules; notice; hearing; emergency rules; proceedings to contest; review and approval by governor.

(a) Prior to an agency's adoption, amendment or repeal of all rules other than interpretative rules or statements of general policy, the agency shall:

(i) Give at least forty-five (45) days notice of its intended action. Notice shall be mailed to all persons making timely requests of the agency for advanced notice of its rulemaking proceedings and to the attorney general, the secretary of state's office as registrar of rules, and the legislative service office if a state agency. The agency shall submit a copy of the proposed rules, in a format conforming to any requirements prescribed pursuant to subsection (f) of this section, with the notice given to the legislative service office. The notice shall include:

(A) The time when, the place where and the manner in which interested persons may present their views on the intended action;

(B) A statement of the terms and substance of the proposed rule or a description of the subjects and issues involved;

(C) If an amendment or a repeal, the citation to the agency rule to be amended or repealed;

(D) If new rules, a statement that they are new rules and a citation of the statute which authorizes adoption of the rules;

(E) The place where an interested person may obtain a copy of the proposed rules in a format conforming to any requirements prescribed pursuant to subsection (f) of this section;

(F) If the agency asserts that all or a portion of a rule is proposed to be adopted, amended or repealed in order for the state to comply with federal law or regulatory requirements:

(I) A statement that the adoption, amendment or repeal of the rule is required by federal law or regulation together with citations to the applicable federal law or regulation; and

(II) A statement whether the proposed rule change meets minimum federal requirements or whether the proposed rule change exceeds minimum federal requirements.

(G) A statement whether the proposed rule change meets minimum substantive state statutory requirements or whether the proposed rule change exceeds minimum substantive state statutory requirements. If the rule change exceeds minimum substantive state statutory requirements, the agency shall include a statement explaining the reason why the rule exceeds minimum substantive statutory requirements;

(H) A statement that the agency has complied with the requirements of W.S. 9-5-304 and the location where an interested person may obtain a copy of the assessment used to evaluate the proposed rule pursuant to W.S. 9-5-304;

(J) A concise statement of the principal reasons for adoption of the rule. In compliance with Tri-State Generation and Transmission Association, Inc. v. Environmental Quality Council, 590 P.2d 1324 (Wyo. 1979), the statement shall include a brief explanation of the substance or terms of the rule and the basis and purpose of the rule;

(K) If a state agency is proposing a rule that differs from the uniform rules listed in subsection (j) of this section, a statement of the reasons for varying from the uniform rules.

(ii) Afford all interested persons reasonable opportunity to submit data, views or arguments, orally or in writing, provided this period shall consist of at least forty-five (45) days from the later of the dates specified under subparagraph (A) of this paragraph, and provided:

(A) In the case of substantive rules, opportunity for oral hearing shall be granted if requested by twenty-five (25) persons, or by a governmental subdivision, or by an association having not less than twenty-five (25) members. No hearing under this subparagraph shall be conducted until at least forty-five (45) days after the later of:

(I) The date notice of intended action is given under paragraph (i) of this subsection; or

(II) The date notice is published if publication is required by subsection (e) of this section.

(B) The agency shall consider fully all written and oral submissions respecting the proposed rule;

(C) If prior to final adoption any person objects to the accuracy of a statement made by the agency pursuant to W.S. 16-3-103(a)(i)(F)(I) or (II), the agency shall:

(I) Provide the objecting person with a written response explaining and substantiating the agency's position by reference to federal law or regulations; and

(II) Include with the final rules submitted for review to the governor and legislative service office a concise statement of the objection and the agency's response.

(D) Upon adoption of the rule, the agency, if requested to do so by an interested person, either prior to adoption or within thirty (30) days thereafter, shall issue a concise statement of the principal reasons for overruling the consideration urged against its adoption.

(iii) Comply with the requirements of W.S. 9-5-304.

(b) When an agency finds that an emergency requires the agency to proceed without notice or opportunity for hearing required by subsection (a) of this section, it may adopt emergency rules. An emergency rule is effective when filed. A state agency emergency rule shall bear the endorsement of the governor's concurrence on the finding of emergency before the registrar of rules accepts the rule for filing. The rule so adopted shall be effective for no longer than one hundred twenty (120) days but the adoption of an identical rule under W.S. 16-3-103(a) or of an emergency rule under this subsection is not precluded. In no case shall identical or substantially similar emergency rules be effective for a total period of more than two hundred forty (240) days. A local agency may proceed with the emergency rule when notice of the emergency is filed with the local registrar of rules.

(c) No rule is valid unless submitted, filed and adopted in substantial compliance with this section. A proceeding to contest any rule on the ground of noncompliance with the procedural requirements of this section must be commenced within two (2) years from the effective date of the rule.

(d) No state agency rule or any amendment, repeal, modification or revision of the rule may be filed with the registrar of rules unless the rule has been submitted to the governor for review and the governor has approved and signed the rule. Except in the case of emergency rules and rules adopted by the game and fish commission fixing general hunting or fishing regulations, season or bag limits or establishing hunting areas, the governor shall not approve any rule until the date of receipt of the legislative management council's recommendation under W.S. 28-9-106(a) or until forty (40) days after the rule is filed with the legislative service office pursuant to W.S. 28-9-103(b), whichever is sooner. During the process of approving rules, the governor may disapprove any portion of a rule not conforming to paragraphs (d)(i), (ii) or (iii) of this section by clearly indicating the portion of the rule disapproved and the basis for the disapproval. Only those portions of a rule approved by the governor shall be filed with the registrar of rules as provided by W.S. 16-3-104(a). Any portion of a rule disapproved by the governor shall be returned to the agency and shall be null and void and shall not be filed, implemented or enforced. The governor shall report his disapproval of any rule or portion thereof to the management council within fifteen (15) days. The governor shall not approve any rule or any amendment, repeal, modification or revision of the rule unless it:

(i) Is within the scope of the statutory authority delegated to the adopting agency;

(ii) Appears to be within the scope of the legislative purpose of the statutory authority; and

(iii) Has been adopted in compliance with the procedural requirements of this act. For the purposes of this subsection, an "agency" means any authority, bureau, board, commission, department, division, officer or employee of the state, excluding the state legislature and the judiciary.

(e) If a state agency created as a licensing or regulatory board or commission for any profession or occupation regulated under title 33 regularly publishes a newsletter, memorandum or other written or electronic communication which serves as a medium to provide information to members of the regulated profession or occupation, then in addition to the notice requirements of subsection (a) of this section, the agency shall publish within that medium the proposed rules in a format conforming to any requirements prescribed pursuant to subsection

(f) of this section. If the agency determines publication in such manner is not practicable, it shall publish within the chosen medium at least once prior to taking final action to adopt, amend or repeal any rule notice of its intended rulemaking proceedings and make available the full text of all proposed changes in the format conforming to any requirements prescribed pursuant to subsection (f) of this section. This subsection shall not apply to emergency rules adopted pursuant to subsection (b) of this section.

(f) The state registrar of rules shall prescribe a format for state agencies to follow in preparing proposed amendments to existing rules which shall ensure that additions to and deletions from existing language are clearly indicated.

(g) Upon receipt of a notice of intended action from a state agency under paragraph (a)(i) of this section, the secretary of state's office shall maintain a file of these notices and make them available for public inspection during regular business hours. A notice shall remain in the file until the rules are adopted or until the agency determines not to take action to adopt the proposed rules. To the extent that resources enable the office to do so, the secretary of state's office shall make these notices available to the public electronically. The secretary of state may promulgate rules specifying the format of notices submitted by state agencies under this subsection. Compliance with this subsection shall not affect the validity of rules promulgated by state agencies.

(h) An agency may incorporate, by reference in its rules and without publishing the incorporated matter in full, all or any part of a code, standard, rule or regulation that has been adopted by an agency of the United States or of this state, another state or by a nationally recognized organization or association, provided:

(i) The agency determines that incorporation of the full text in agency rules would be cumbersome or inefficient given the length or nature of the rules;

(ii) The reference in the rules of the incorporating agency fully identifies the incorporated matter by location, date and otherwise, and states that the rule does not include any later amendments or editions of the incorporated matter;

(iii) The agency, organization or association originally issuing the incorporated matter makes copies of it readily available to the public;

(iv) The incorporating agency maintains and makes available for public inspection a copy of the incorporated matter at cost from the agency and the rules of the incorporating agency state where the incorporated matter is available on the internet as defined in W.S. 9-2-1035(a)(iii); and

(v) The incorporating agency otherwise complies with all procedural requirements under this act and the rules of the registrar of state agency rules governing the promulgation and filing of agency rules.

(j) Each state agency shall adopt as much of the uniform rules promulgated pursuant to the following provisions as is consistent with the specific and distinct requirements of the agency and state or federal law governing or applicable to the agency:

(i) W.S. 16-3-102(d);

(ii) W.S. 16-4-204(e).

16-3-104. Filing of copies of rules; permanent register; effective dates; manner of preparation; advice and assistance of attorney general.

(a) Each agency shall file in the office of the registrar of rules a certified copy of each rule adopted by it as approved by the governor. State agencies shall file each rule within seventy-five (75) days of the date of agency action adopting the rule or it is not effective. There shall be noted upon the rule a citation of the authority by which it or any part of it was adopted. The registrar of rules shall keep a permanent register of the rules open to public inspection. Not more than ten (10) days after a state agency files a copy of a rule in the office of the registrar of rules, the agency shall mail a notice that the rule has been filed to each person who was sent a notice under W.S. 16-3-103(a)(i). The notice shall contain a citation to the rule and the date it was filed. Failure to send the notice required under this subsection does not affect the effectiveness of the rule.

(b) Each rule and any amendment or repeal adopted after June 1, 1982 is effective after filing in accordance with subsection (a) of this section and W.S. 28-9-108 except:

(i) If a later date is required by statute or specified in the rule, the later date is the effective date;

(ii) Where the agency finds that an emergency exists and the finding is concurred in by the governor, a rule or amendment or repeal may be effective immediately upon filing with the registrar of rules and if a state agency, also with the legislative service office. Existing rules remain in effect unless amended or repealed, subject to this section or W.S. 28-9-105 or 28-9-106.

(c) Rules shall be prepared in the manner and form prescribed by the state registrar of rules. The registrar of rules may refuse to accept for filing any rule that does not conform to the prescribed form.

(d) The attorney general shall furnish advice and assistance to all state agencies in the preparation of their regulations, and in revising, codifying and editing existing or new regulations.

16-3-105. Compilation and indexing of administrative code; charges for copies; authentication by registrar.

(a) The registrar of state agency rules shall compile, index and publish a Wyoming administrative code. The code shall:

(i) Contain each rule adopted by a state agency, but shall not contain emergency rules;

(ii) Be compiled, numbered and indexed in a unified manner that permits the code to be easily amended and affords ease of use and accessibility to the public, including strong and effective word search capabilities;

(iii) Be available to the public at no charge through the Internet;

(iv) Be updated on the Internet as soon as practicable after the effective date of newly filed or amended rules.

(b) The registrar of state agency rules may make a reasonable charge for any rules published except those furnished to state officers, agencies, members of the legislature or the legislative service office and others in the employment of the state and its political subdivisions requiring the rules in the performance of their duties. The registrar of local agency rules may make a reasonable charge for copies of any rule on file.

(c) The registrar's authenticated file stamp on a rule or publication of a rule shall raise a rebuttable presumption that the rule was adopted and filed in compliance with all requirements necessary to make it effective.

(d) The registrar of state agency rules shall maintain and publish a current index of all state agency rules filed with the registrar. The index shall list the effective date of each set of rules or the effective date of each set of amendments to an agency's rules. Copies of the index shall be distributed as provided by W.S. 16-3-105(b).

16-3-106. Petition for promulgation, amendment or repeal of rules.

Any interested person may petition an agency requesting the promulgation, amendment or repeal of any rule and may accompany his petition with relevant data, views and arguments. Each agency may prescribe by rule the form of the petition and the procedure for its submission, consideration and disposition. Upon submission of a petition, the agency as soon as practicable either shall deny the petition in writing (stating its reasons for the denials) or initiate rulemaking proceedings in accordance with W.S. 16-3-103. The action of the agency in denying a petition is final and not subject to review.

16-3-107. Contested cases; general procedure.

(a) In any contested case, all parties shall be afforded an opportunity for hearing after reasonable notice served personally or by mail. Where the indispensable and necessary parties are composed of a large class, the notice shall be served upon a reasonable number thereof as representatives of the class or by giving notice by publication in the manner specified by the rules or an order of the agency.

(b) The notice shall include a statement of:

(i) The time, place and nature of the hearing;

(ii) The legal authority and jurisdiction under which the hearing is to be held;

(iii) The particular sections of the statutes and rules involved;

(iv) A short and plain statement of the matters asserted. If the agency or other party is unable to state the matters in detail at the time the notice is served, the initial notice may be limited to a statement of the issues involved, and thereafter upon application a more definite and detailed statement shall be furnished.

(c) In all contested cases, depositions and discovery relating thereto, agencies shall have the authority to administer oaths and affirmations, subpoena witnesses and require the production of any books, papers or other documents relevant or material to the inquiry. In case of refusal to obey a subpoena issued by the agency in a contested case, deposition or discovery relating thereto, to any person, the district court for the district in which the hearing or deposition or other proceeding is being conducted, or for the district where the person may be served, may upon application by the agency issue to the person refusing to obey the subpoena an order requiring the person to show cause for the refusal or to appear before the agency or other person designated by it there to produce documentary evidence if so ordered or there to give evidence touching the matter in question. Any failure to show cause or obey the order of court may be punished by the court as a contempt thereof.

(d) In all contested cases the agency shall as part of its rules of practice provide that the agency or one (1) of its presiding officers designated by it upon application of any party shall issue a subpoena requiring the appearance of witnesses for the purpose of taking evidence or requiring the production of any books, papers or other documents relevant or material to the inquiry.

(e) The agency upon motion made promptly and in any event at or before the time specified in the subpoena for compliance therewith, may quash or modify the subpoena if it is unreasonable and oppressive, or in the event issued pursuant to subsection (g) of this section may condition denial of the motion upon the advancement by the person in whose behalf the

subpoena is issued of the reasonable cost of producing the books, papers, documents or tangible things.

(f) If a subpoena issued pursuant to this section is disobeyed and if the agency fails to apply pursuant to subsection (c) of this section for enforcement any party may apply to the district court for the district having venue under subsection (c) of this section for enforcement pursuant to subsection (c) of this section.

(g) In all contested cases the taking of depositions and discovery shall be available to the parties in accordance with the provisions of Rules 26, 28 through 37 (excepting Rule 37(b)(1) and 37(b)(2)(D) therefrom) of the Wyoming Rules of Civil Procedure in effect on the date of the enactment of this act and any subsequent rule amendments thereto. All references therein to the "court" shall be deemed to refer to the appropriate "agency"; all references to the use of the subpoena power shall be references to subsection (c) of this section; all references to "trial" shall be deemed references to "hearing"; all references to "plaintiff" shall be deemed references to "a party". If a party or other witness refuses to be sworn or refuses to answer any question after being directed to do so by the agency in which the action is pending, the refusal to obey the agency order shall be enforced in the same manner as is provided in subsection (c) of this section.

(h) Any agency which is a party to the contested case is subject to the discovery provisions of this section but neither the agency, nor any member, officer or employee shall be required to disclose information which is confidential or privileged under the law and no member of the presiding agency shall be compelled to testify or give a deposition in a contested case. Discovery sought from the agency initially shall be by written application. If the agency refuses to allow discovery in whole or in part the aggrieved party may apply to the presiding officer for an order compelling discovery. If the presiding officer fails or refuses to compel discovery, the aggrieved party may apply to the district court for the district in which the hearing, deposition or other proceeding is being or is to be conducted for an order directed to the agency compelling discovery. The presiding officer or district court shall enter such order as may be appropriate.

(j) Opportunity shall be afforded all parties to respond and present evidence and argument on all issues involved. Any person compelled to appear in person before any agency or

representative thereof shall be accorded the right to be accompanied, represented and advised by counsel or, if permitted by the agency, by other qualified representative.

(k) Every party shall be accorded the right to appear in person or by or with counsel or other duly qualified representative in any agency proceeding in accordance with such rules as the agency prescribes and the pertinent rules of the supreme court of Wyoming. So far as the orderly conduct of public business permits, any interested person may appear before any agency or its responsible officers or employees for the presentation, adjustment or determination of any issue, request or controversy in any proceeding (interlocutory, summary or otherwise) or in connection with any agency function. Every agency shall proceed with reasonable dispatch to conclude any matter presented to it except that due regard shall be had for the convenience and necessity of the parties or their representatives. Any person representing an agency at a hearing in a contested case in which the agency is a party shall not in the same case serve as presiding officer or provide ex parte advice regarding the case to the presiding officer or to the body or any member of the body comprising the decision makers.

(m) No process, requirement of a report, inspection, or other investigative act or demand shall be issued, made or enforced in any manner or for any purpose except as authorized by law. Every person compelled to submit data or evidence is entitled to retain or, on payment of lawfully prescribed costs, procure a copy of a transcript thereof, except that in a nonpublic investigatory proceeding the witness may for good cause be limited to inspection of the official transcript of his testimony.

(n) Unless precluded by law, informal disposition may be made of any contested case by stipulation, agreed settlement, consent order or default.

(o) The record in a contested case must include:

(i) All formal or informal notices, pleadings, motions and intermediate rulings;

(ii) Evidence received or considered including matters officially noticed;

(iii) Questions and offers of proof, objections and rulings thereon;

(iv) Any proposed findings and exceptions thereto;

(v) Any opinion, findings, decision or order of the agency and any report by the officer presiding at the hearing.

(p) In all contested cases the proceeding including all testimony shall be reported verbatim stenographically or by any other appropriate means determined by the agency or the officer presiding at the hearing.

(q) Oral proceedings or any part thereof shall be transcribed on request of any party upon payment of the cost thereof.

(r) Findings of fact shall be based exclusively on the evidence and matters officially noticed.

16-3-108. Contested cases; admissible evidence; cross-examination; judicial notice.

(a) In contested cases irrelevant, immaterial or unduly repetitious evidence shall be excluded and no sanction shall be imposed or order issued except upon consideration of the whole record or such portion thereof as may be cited by any party and unless supported by the type of evidence commonly relied upon by reasonably prudent men in the conduct of their serious affairs. Agencies shall give effect to the rules of privilege recognized by law. Subject to these requirements and agency rule if the interests of the parties will not be prejudiced substantially testimony may be received in written form subject to the right of cross-examination as provided in subsection (c) of this section.

(b) Documentary evidence may be received in the form of copies or excerpts, if the original is not readily available. Upon request, parties shall be given opportunity to compare the copy with the original.

(c) A party may conduct cross-examinations required for a full and true disclosure of the facts and a party is entitled to confront all opposing witnesses.

(d) Notice may be taken of judicially cognizable facts. In addition notice may be taken of technical or scientific facts within the agency's specialized knowledge or of information, data and material included within the agency's files. The

parties shall be notified either before or during the hearing or after the hearing but before the agency decision of material facts noticed, and they shall be afforded an opportunity to contest the facts noticed.

16-3-109. Contested cases; consideration of record; exceptions to decision; briefs and oral argument.

The agency shall consider the whole record or any portion stipulated to by the parties. In the event a recommended decision is rendered all parties shall be afforded a reasonable opportunity to file exceptions thereto which shall be deemed a part of the record. All parties as a matter of right shall be permitted to file a brief with the agency and oral argument shall be allowed in the discretion of the agency.

16-3-110. Contested cases; final decision; contents; notification.

A final decision or order adverse to a party in a contested case shall be in writing or dictated into the record. The final decision shall include findings of fact and conclusions of law separately stated. Findings of fact if set forth in statutory language, shall be accompanied by a concise and explicit statement of the underlying facts supporting the findings. Parties shall be notified either personally or by mail of any decision or order. A copy of the decision and order shall be delivered or mailed forthwith to each party or to his attorney of record.

16-3-111. Contested cases; limitations on consultations and participations.

Unless required for the disposition of ex parte matters authorized by law, members of the agency, employees presiding at a hearing in a contested case and employees assisting the foregoing persons in compiling, evaluating and analyzing the record in a contested case or in writing a decision in a contested case shall not directly or indirectly in connection with any issue in the case consult with any person other than an agency member, officer, contract consultant or employee or other state or federal employee, any party other than the agency or with any agency employee, contract consultant or other state or federal employee who was engaged in the investigation, preparation, presentation or prosecution of the case except upon notice and opportunity for all parties to participate. Nothing herein contained precludes any agency member from consulting

with other members of the agency. No officer, employee, contract consultant, federal employee or agent who has participated in the investigation, preparation, presentation or prosecution of a contested case shall be in that or a factually related case participate or advise in the decision, recommended decision or agency review of the decision, or be consulted in connection therewith except as witness or counsel in public proceedings. A staff member is not disqualified from participating or advising in the decision, recommended decision or agency review because he has participated in the presentation of the case in the event the staff member does not assert or have an adversary position.

16-3-112. Contested cases; presiding officers; qualifications; powers; outside personnel; hearing officers.

(a) If not otherwise authorized by law there shall preside at the taking of evidence in all contested cases the statutory agency, one (1) or more members of the body which comprises the agency, or an employee of the agency or an employee of another agency designated by the agency to act as presiding officer. The functions of all those presiding in contested cases shall be conducted in an impartial manner. Any officer shall at any time withdraw if he deems himself disqualified provided there are other qualified presiding officers available to act.

(b) Officers presiding at hearings shall have authority, subject to the published rules of the agency and within its power to:

(i) Administer oaths and affirmations;

(ii) Issue subpoenas;

(iii) Rule upon offers of proof and receive relevant evidence;

(iv) Take or cause depositions to be taken in accordance with the provisions of this act and the rules of the agency;

(v) Regulate the course of the hearing;

(vi) Hold conferences for the settlement or simplification of the issues;

(vii) Dispose of procedural requests or similar matters;

(viii) Make recommended decisions when directed to do so by the agency; and

(ix) Take any other action authorized by agency rules consistent with this act.

(c) In all contested cases to the extent that it is necessary in order to obtain compliance with W.S. 16-3-111 the agency (excepting county and municipal agencies and political subdivisions on the county and local level) may request the office of the attorney general to furnish to the agency such personnel as may be necessary in order for the agency to properly investigate, prepare, present and prosecute the contested case before the agency. The attorney general upon the receipt of the request shall promptly comply with same with no charge being made against the requesting agency's appropriation other than for travel and per diem expenses.

(d) To the extent an agency utilizes an employee of another agency (other than the staff of the attorney general) to preside at a hearing or otherwise the salary of the employee during the period of the employment and the expenses incurred by the employee shall be charged against the appropriation of the using agency.

(e) When required by law an agency shall adopt rules and regulations providing a procedure for the use and the selection of an administrative hearing officer. An agency shall not delegate the authority to make final decisions to an independent administrative hearing officer unless required by law.

16-3-113. License hearings.

(a) When the grant, denial, suspension or renewal of a license is required by law to be preceded by notice and an opportunity for hearing the provisions of this act concerning contested cases apply.

(b) When a licensee has made timely and sufficient application for the renewal of a license or a new license with reference to any activity of a continuing nature, the existing license does not expire until the application has been finally determined by the agency, and, in case the application is denied or the terms of the new license limited, until the last day for seeking review of the agency order or a later date fixed by order of the reviewing court.

(c) No revocation, suspension, annulment or withdrawal of any license is lawful unless, prior to the institution of agency proceedings, the agency gave notice by mail to the licensee of facts or conduct which warrant the intended action, and the licensee was given an opportunity to show compliance with all lawful requirements for the retention of the license. If the agency finds that public health, safety or welfare imperatively requires emergency action, and incorporates a finding to that effect in its order, summary suspension of a license may be ordered pending proceedings for revocation or other action. A cancellation of a driver's license pursuant to W.S. 31-7-121(c) shall not be valid until the department of transportation gives notice by mail to the licensee of the facts which warrant the intended action and provides the licensee with an opportunity to provide additional evidence or information with respect to the condition at issue within fifteen (15) days of the mailing of the notice. These proceedings shall be promptly instituted and determined.

16-3-114. Judicial review of agency actions; district courts.

(a) Subject to the requirement that administrative remedies be exhausted and in the absence of any statutory or common-law provision precluding or limiting judicial review, any person aggrieved or adversely affected in fact by a final decision of an agency in a contested case, or by other agency action or inaction, or any person affected in fact by a rule adopted by an agency, is entitled to judicial review in the district court for the county in which the administrative action or inaction was taken, or in which any real property affected by the administrative action or inaction is located, or if no real property is involved, in the district court for the county in which the party aggrieved or adversely affected by the administrative action or inaction resides or has its principal place of business. The procedure to be followed in the proceeding before the district court shall be in accordance with rules heretofore or hereinafter adopted by the Wyoming supreme court.

(b) The supreme court's authority to adopt rules governing review from agencies to the district courts shall include authority to determine the content of the record upon review, the pleadings to be filed, the time and manner for filing the pleadings, records and other documents and the extent to which supplemental testimony and evidence may be taken or considered

by the district court. The rules adopted by the supreme court under this provision may supersede existing statutory provisions.

(c) To the extent necessary to make a decision and when presented, the reviewing court shall decide all relevant questions of law, interpret constitutional and statutory provisions, and determine the meaning or applicability of the terms of an agency action. In making the following determinations, the court shall review the whole record or those parts of it cited by a party and due account shall be taken of the rule of prejudicial error. The reviewing court shall:

(i) Compel agency action unlawfully withheld or unreasonably delayed; and

(ii) Hold unlawful and set aside agency action, findings and conclusions found to be:

(A) Arbitrary, capricious, an abuse of discretion or otherwise not in accordance with law;

(B) Contrary to constitutional right, power, privilege or immunity;

(C) In excess of statutory jurisdiction, authority or limitations or lacking statutory right;

(D) Without observance of procedure required by law; or

(E) Unsupported by substantial evidence in a case reviewed on the record of an agency hearing provided by statute.

16-3-115. Judicial review of agency actions; supreme court.

An aggrieved party may obtain a review of any final judgment of the district court under this act by appeal to the supreme court. The appeal shall be taken as in other civil cases.

Subsection 4.1.2
Organization of the Proposed Program

Department of Environmental Quality

WYOMING

4.1.2 Organization of the Proposed Program

Section 4.1.2 of SA-700, *Handbook for Processing an Agreement* requires that Wyoming provide the basic organizational structure and resources to conduct the program activities to ensure the program structure is adequate to protect health and safety against radiation hazards. Contained within this section is an outline of how Wyoming meets the criteria listed in SA-700 and a narrative describing the proposed program. Organizational charts are provided in Appendix A.

SA 700, *Handbook for Processing an Agreement*

4.1.2 Organization of the Proposed Program

4.1.2.1 Information Needed

(a) The State should submit a concise narrative description of the materials program. The narrative should include:

1. A brief history of radiation control in the State

- Refer to the Introduction of the Application, page i

2. A description of the current structure of the program, including regional offices

- See narrative that follows in Section 4.1.2

3. Individual discussion of each program element in Section 4.0 of the Handbook

- Refer to the Introduction of the Application, pages i-v

4. For each program element, cross references to the pertinent portions of the States' supporting documentation for the application

- Refer to the Introduction of the Application, pages i-v

(b) The State should submit organizational charts. The charts should show:

1. All the organizational levels between the Governor and the Program Director or designee

- Refer to Appendix A of Section 4.1.2

2. The organizational Structure and staff of the Agreement material program; and

- Wyo. Stat. § 35-11-2003(c)

3. Regional offices and staff, if any

- LQD has regional offices but current URP staff are based out of the Cheyenne office.

4.1.2.2 Evaluation Criteria

(a) The organization of the Agreement materials program must cover all of the

program elements in the Handbook, Section 4.0. For this criterion, it is only necessary to show that responsibility for each program element is assigned to a unit of the organization.

- See narrative below in Section 4.1.2.

(b) The State may divide the program elements among separate agencies. If State law does not specify the division, the State should describe how it divides the regulatory responsibility. The State should submit copies of MOU's describing the responsibility of each agency. MOUs should also include a discussion of efforts that will be made to assure cooperation and to ensure an orderly and consistent regulatory approach between the separate agencies. The organization charts should clearly show the position of the Agreement materials program within the State governmental structure.

- See narrative below in Section 4.1.2 and Appendix A to Section 4.1.2

(c) The Agreement materials program organizational charts should show both the technical staff and support staff positions. They should show positions assigned to the program both full-time and part-time. If the Agreement materials program uses the resources of another agency, the Agreement material program narrative description should detail the relationship. The narrative description should also discuss any use of contract services and advisory bodies.

- See narrative below in Section 4.1.2 and Appendix A to Section 4.1.2

4.1.2 **Narrative of the Organization of the Proposed Program.**

4.1.2.1 Wyoming Department of Environmental Quality

The Wyoming Department of Environmental Quality (WDEQ) was created in 1973 with the mission to protect, conserve, and enhance the quality of Wyoming's environment for the benefit of current and future generations. The Governor, with the advice and consent of the Senate, appoints a Director who is the executive and administrative head of the Department. WDEQ is made of seven divisions: Abandoned Mine Lands, Administration, Air Quality, Industrial Siting, Land Quality, Solid and Hazardous Waste, and Water Quality. Each Division is under immediate direction and control of an Administrator appointed by the Director.

4.1.2.2 Environmental Quality Council and Advisory Boards

The Environmental Quality Council was created along with the Department to serve as an independent entity that reviews matters concerning the prevention, reduction, and elimination of pollution, and preservation of Wyoming's water, air, and land quality. The power and duties of the Council are to : (1) Promulgate rules and regulations necessary for the administration of the Environmental Quality Act, (2) Conduct hearings as required by the Wyoming Administrative Act, (3) Conduct hearings in any case

contesting the administration or enforcement of any law, rule, regulation, standard, or order issued or administered by the Department, and (4) Conduct hearings in any case contesting the grant, denial, suspension, revocation, or renewal of any permit, license, certification, or variance authorized or required by the Environmental Quality Act.

In addition to the Environmental Council, (3) advisory boards exist for each of the air, land, and water divisions. The advisory boards make recommendations to the Environmental Quality Council through the Administrator and Director. These recommendations include reviews of comprehensive plans and programs for the management of solid and hazardous waste, the prevention, control, and abatement of air, water, and land pollution, and the protection of public water supplies. Additionally, the advisory board makes recommendations to the council through the administrator and director for the adoption of rules, regulations, and standards to implement and carry out for their respective division.

4.1.2.3 Land Quality Division

Since the enactment of the Environmental Quality Act, the Land Quality Division (LQD) has ensured that any land disturbances from mining are minimal, and that affected areas are properly restored once mining is complete. The Division is separated into three regional offices that cover different geographical locations of the State; Region 1 covering the southeastern portion of the State, Region 2 covering the western half of the State, and Region 3 covering the northeastern portion of the State. Additionally, Land Quality has two other programs; Divisional Services, which provides technical support to the regions, and the Uranium Recovery Program (URP), which is discussed in more depth below. Pertinent organizational charts are included in the Attachments in 4.1.2.

LQD has overseen mining in Wyoming, gaining experience and expertise in the regulatory oversight of mining activities for a number of different mineral commodities and technologies, including both conventional and in-situ uranium mining. In-situ mining of Uranium has required LQD to work in collaboration with the Water Quality Division and the NRC since all have jurisdictional oversight over these type of operations. The overlapping regulatory duties have lead the State of Wyoming to seek out becoming an Agreement State such that WDEQ is the sole regulator of uranium recovery operations in the State.

In an effort to achieve Agreement State status, the WDEQ has been designated per W.S. 35-11-2001(b) as the lead agency for the regulation of source material involved in the extraction or concentration of uranium or thorium in source material and ores at milling facilities, and the management and disposal of byproduct material as defined in Section 11e.(2) of the Atomic Energy Act (AEA). The WDEQ fulfills its duties through the URP held within the LQD. The URP, together with the expertise of LQD, will meet the objectives of the NRC relative to oversight of source material and 11e.(2) material in the State of Wyoming.

4.1.2.4 Uranium Recovery Program

The URP consists of staff responsible for implementing the radiation responsibilities of WDEQ/LQD as it pertains to uranium recovery operations. Currently the staff are located at the central office located in Cheyenne. WDEQ/LQD may in the future have URP personnel located at WDEQ regional offices such as Casper since this office is closer in proximity to the regulated community. The URP currently consists of a Program Manager, four professional staff, and one supporting staff member for clerical support. Additionally, the program will utilize the expertise of LQD as it pertains to uranium mining.

4.1.2.4.1 Uranium Recovery Program Funding

The Uranium Recovery Program will be completely funded by fees collected from the regulated community. As outlined in Chapter 7 Fees of the Uranium Recovery Program Rules, the Department will collect fees at the beginning of the fiscal year to cover the legislative appointed budget for the program. At the end of the fiscal year the Department will evaluate the costs of each licensee and determine if additional funds need to be collected, or if a credit or refund is needed. Changes to the budget will require legislative approval.

4.1.2.5 Legal Support

Interpretation of Wyoming law is performed by the Wyoming Attorney General's Office. An Assistant Attorney General has been assigned to represent the URP and provides legal support and advice to the URP.

4.1.2.6 Third Party Consultants

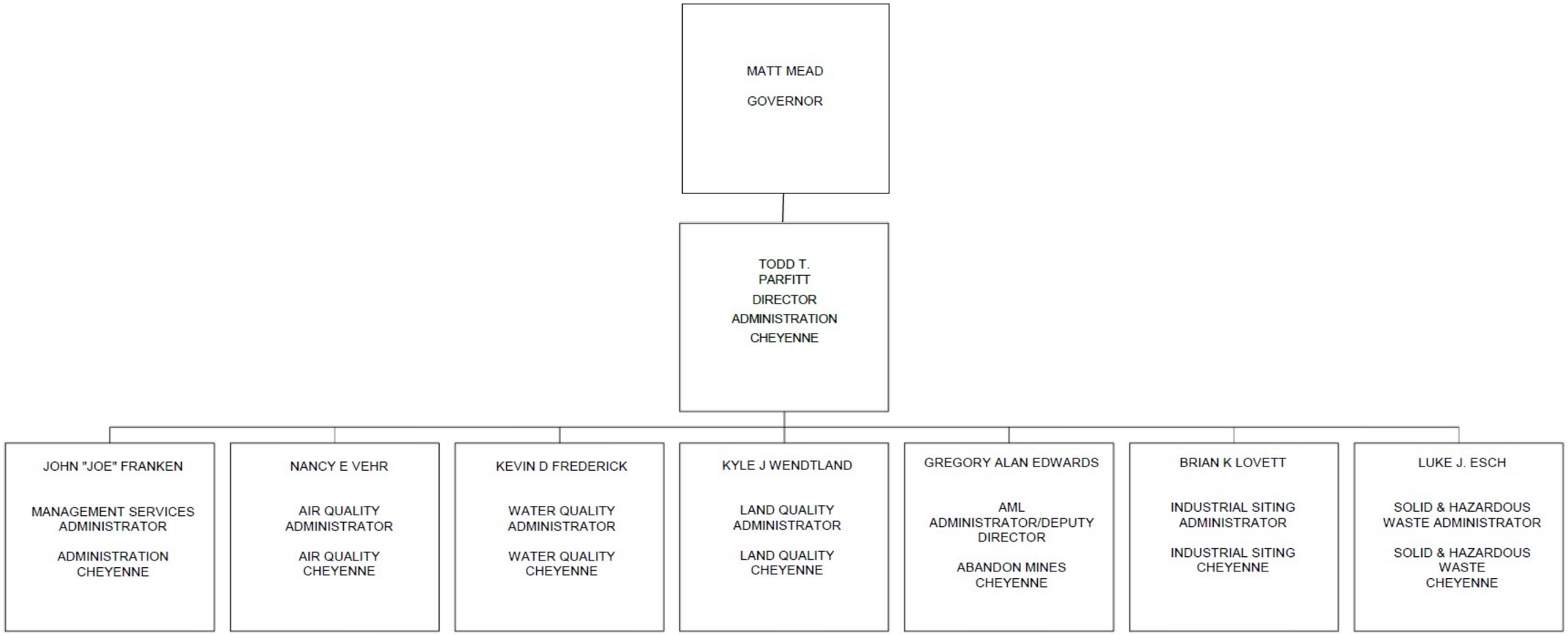
The URP reserves the right to consult with third part consultants when expertise on certain licensing actions may be required. The contractor will have to follow State policies on procurement, and the URP program will ensure contractual services will not cause conflicts of interest. Additionally, at times the Department may need to send samples to third party laboratories for analysis of constituents to verify licensees' release or decontamination surveys. When contractual services are required, the Department will verify that laboratory QA/QC practices meet the Department standards, and that the laboratory has the appropriate test methods for each constituent sent in for analysis. In regards to QA/QC, at a minimum they will have U.S. Environmental Protection Agency (EPA) certification demonstrating that their QA/QC program meets EPA standards.

Appendix A to Subsection 4.1.2
Organizational Charts

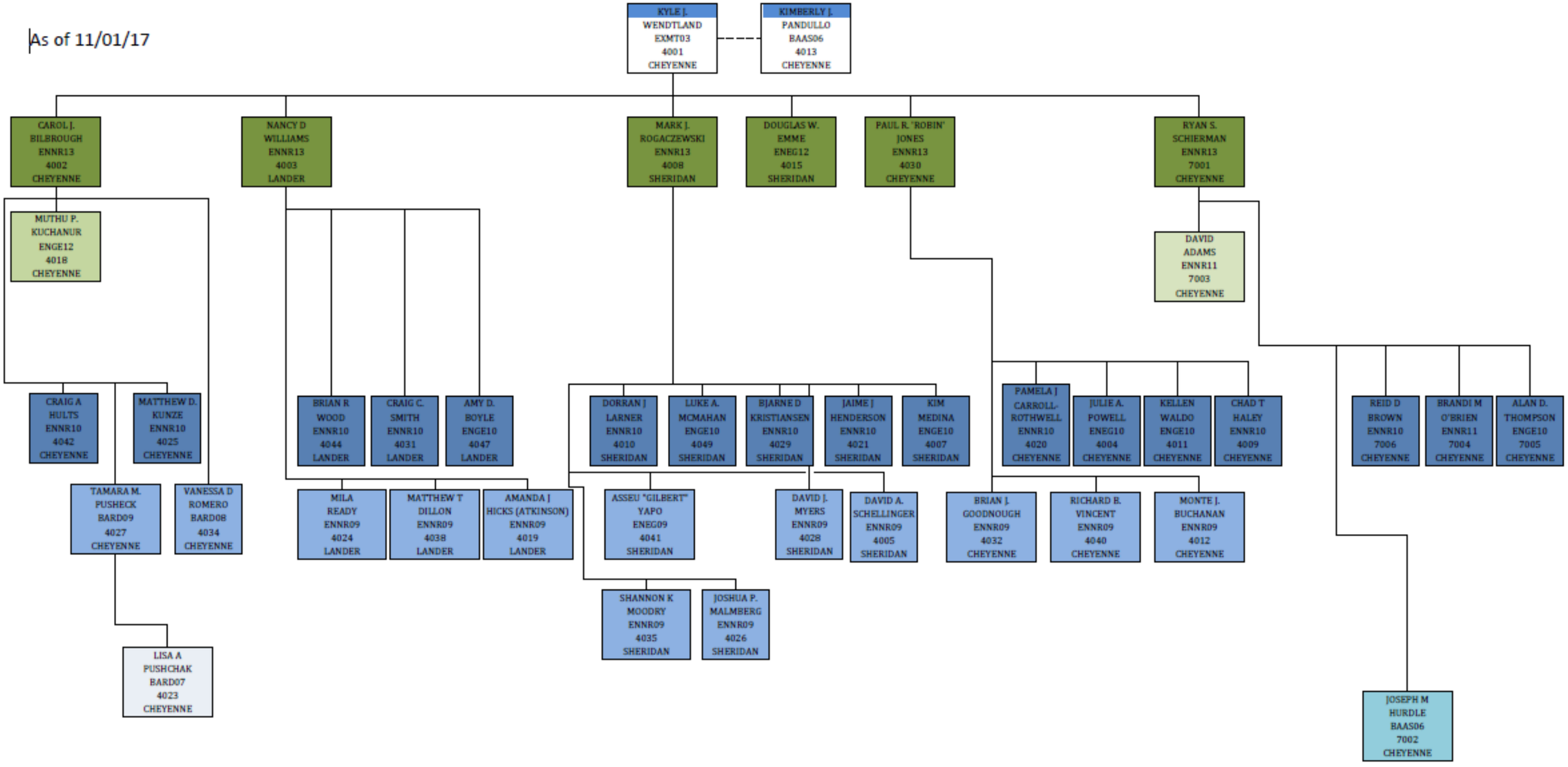
Department of Environmental Quality

WYOMING

DEQ Organizational Chart



As of 11/01/17


KYLE J. WENDTLAND EXMT03 4001 CHEYENNE
KIMBERLY J. PANDULLO BAAS06 4013 CHEYENNE
CAROL J. BILBROUGH ENNR13 4002 CHEYENNE
NANCY D WILLIAMS ENNR13 4003 LANDER
MARK J. ROGACZEWSKI ENNR13 4008 SHERIDAN
DOUGLAS W. EMME ENEG12 4015 SHERIDAN
PAUL R. 'ROBIN' JONES ENNR13 4030 CHEYENNE
RYAN S. SCHIERMAN ENNR13 7001 CHEYENNE
MUTHU P. KUCHANUR ENGE12 4018 CHEYENNE
DAVID ADAMS ENNR11 7003 CHEYENNE
CRAIG A HULTS ENNR10 4042 CHEYENNE
MATTHEW D. KUNZE ENNR10 4025 CHEYENNE
BRIAN R WOOD ENNR10 4044 LANDER
CRAIG C. SMITH ENNR10 4031 LANDER
AMY D. BOYLE ENGE10 4047 LANDER
DORRAN J LARNER ENNR10 4010 SHERIDAN
LUKE A. MCMAHAN ENGE10 4049 SHERIDAN
BJARNE D KRISTIANSEN ENNR10 4029 SHERIDAN
JAIME J HENDERSON ENNR10 4021 SHERIDAN
KIM MEDINA ENGE10 4007 SHERIDAN
PAMELA J CARROLL-ROTHWELL ENNR10 4020 CHEYENNE
JULIE A. POWELL ENEG10 4004 CHEYENNE
KELLEN WALDO ENGE10 4011 CHEYENNE
CHAD T HALEY ENNR10 4009 CHEYENNE
REID D BROWN ENNR10 7006 CHEYENNE
BRANDI M O'BRIEN ENNR11 7004 CHEYENNE
ALAN D. THOMPSON ENGE10 7005 CHEYENNE
TAMARA M. PUSHECK BARD09 4027 CHEYENNE
VANESSA D ROMERO BARD08 4034 CHEYENNE
MILA READY ENNR09 4024 LANDER
MATTHEW T DILLON ENNR09 4038 LANDER
AMANDA J HICKS (ATKINSON) ENNR09 4019 LANDER
ASSEU "GILBERT" YAPO ENEG09 4041 SHERIDAN
DAVID J. MYERS ENNR09 4028 SHERIDAN
DAVID A. SCHELLINGER ENNR09 4005 SHERIDAN
BRIAN J. GOODNOUGH ENNR09 4032 CHEYENNE
RICHARD B. VINCENT ENNR09 4040 CHEYENNE
MONTE J. BUCHANAN ENNR09 4012 CHEYENNE
SHANNON K MOODRY ENNR09 4035 SHERIDAN
JOSHUA P. MALMBERG ENNR09 4026 SHERIDAN
LISA A PUSHCHAK BARD07 4023 CHEYENNE
JOSEPH M HURDLE BAAS06 7002 CHEYENNE

Attorney General Organization Chart

Attorney General
Peter Michael

Chief Deputy Attorney General
John Knepper

Water & Natural Resources Division

Clients/Specialties

DEQ-Land Quality	Game & Fish
DEQ-Air Quality	Endangered Species
DEQ-Water Quality	State Engineer
DEQ-Solid & Haz. Waste	Board of Control
Abandoned Mine Lands	Department of Agriculture
Industrial Siting	Board of Engineers
Oil & Gas Conserv. Comm.	Board of Geologists

Deputy Attorney General
James Kaste

Supervising Attorney General Erik Petersen	Supervising Attorney General Christopher Brown
Senior Asst. Attorney General Mike Robinson	Senior Asst. Attorney General Andrew Kuhlmann
Senior Asst. Attorney General David DeWald	Senior Asst. Attorney General Abigail Boudewyns
Assistant Attorney General Kelly Shaw	Assistant Attorney General James LaRock
Assistant Attorney General Allison Kvien	Assistant Attorney General Sean Towles
Paralegal Matt Mirowski	Paralegal Jessica Curless

Subsection 4.1.3
Content of the Proposed Agreement

Department of Environmental Quality

WYOMING

4.1.3 Content of the Proposed Agreement

Section 4.1.3 of SA-700, *Handbook for Processing an Agreement* contains the requirements of the Proposed Agreement, as identified in Subsections 4.1.3.1 through 4.1.3.2. These Subsections are outlined below with citation to provisions of the Proposed Agreement which satisfy the requirements of each Subsection.

Wyoming Department of Environmental Quality (WDEQ) seeks a limited Agreement. Specifically, WDEQ seeks regulatory authority over source material involved in the extraction or concentration of uranium or thorium in source material and ores at milling facilities, and the management and disposal of byproduct material as defined in Section 11e.(2) of the Atomic Energy Act (AEA). This is in accordance with the Nuclear Regulatory Commission's (NRC) Commission Paper dated August 3, 2016 (SECY-16-0084).

SA-700, *Handbook for Processing an Agreement*

4.1.3 Contents of the Proposed Agreement

4.1.3.1 Information Needed

The proposed Agreement contains the categories of materials and specific authorities that the State wants to regulate. To the extent applicable, the proposed Agreement follows the format and content of the standard Agreement in the Management Directive and Handbook 5.8. The proposed Agreement varies from the standard Agreement in the following ways:

(1) Article I.A varies from the standard Agreement. The State seeks authority only over source material involved in the extraction and concentration of uranium and thorium in source material and ores at uranium and thorium milling facilities in accordance with the NRC's Commission Paper dated August 3, 2016 (SECY-16-0084).

(2) Article II.A.(10) varies from the standard Agreement. The State does not seek authority over laboratory facilities handling 11e.(2) byproduct material. The Commission will retain regulatory authority over laboratory facilities.

(3) The provision Article II.A.(14) varies from the standard Agreement. In concurrence with the NRC Commission decision in SRM 17-0081, the NRC shall retain authority over decommissioning of the ANC site because of unique circumstances.

4.1.3.2 Evaluation Criteria

The proposed Agreement is consistent with the purpose of Section 274 of the Atomic Energy Act of 1954, as amended. It promotes an orderly pattern of regulation and does not create duplication, conflict, or gaps in the nationwide program for the regulation of materials.

The proposed Agreement is consistent with the format and content of the standard Agreement in MD 5.8, Handbook, unless otherwise specified in section 4.1.3.1, above. The State has deleted and modified articles in the standard Agreement as shown in MD 5.8, Handbook. Any other modifications are discussed above in section 4.1.3.1.

The proposed Agreement incorporates Article III of the standard Agreement.

Appendix A to Subsection 4.1.3
Proposed Agreement

Department of Environmental Quality

WYOMING

AGREEMENT
BETWEEN
THE UNITED STATED NUCLEAR REGULATORY COMMISSION
AND
THE STATE OF WYOMING
FOR THE
DISCONTINUANCE OF CERTAIN COMMISSION REGULATORY AUTHORITY
AND
RESPONSIBILITY WITHIN THE STATE PURSUANT TO SECTION 274 OF THE ATOMIC ENERGY ACT OF 1954, AS AMENDED

WHEREAS, The United States Nuclear Regulatory Commission (hereinafter referred to as "the Commission") is authorized under Section 274 of the Atomic Energy Act of 1954, as amended, 42 U.S.C. § 2011 *et seq*. (hereinafter referred to as "the Act"), to enter into agreements with the Governor of any State providing for discontinuance of the regulatory authority of the Commission within the State under Chapters 6, 7, and 8, and Section 161 of the Act with respect to byproduct materials as defined in Section 11e.(2) of the Act, and source materials involved in the extraction or concentration of uranium or thorium in source material and ores at milling facilities; and,

WHEREAS, The Governor of the State of Wyoming is authorized under Wyoming Statute § 35-11-2001 to enter into this Agreement with the Commission; and,

WHEREAS, The Governor of the State of Wyoming certified on **[date]**, that the State of Wyoming (hereinafter referred to as "the State") has a program for the control of radiation hazards adequate to protect public health and safety with respect to the materials within the State covered by this Agreement, and that the State desires to assume regulatory responsibility for such materials; and,

WHEREAS, The Commission found on **[date]** that the program of the State for the regulation of the materials covered by this Agreement is compatible with the Commission's program for the regulation of such materials and is adequate to protect public health and safety; and,

WHEREAS, The State and the Commission recognize the desirability and importance of cooperation between the Commission and the State in the formulation of standards for protection against hazards of radiation and in assuring that State and Commission programs for protection against hazards of radiation will be coordinated and compatible; and,

WHERAS, the Commission and the State recognize the desirability of the reciprocal recognition of licenses, and of the granting of limited exemptions from licensing of those materials subject to this Agreement; and,

WHEREAS, This Agreement is entered into pursuant to the Act;

NOW, THEREFORE, It is hereby agreed between the Commission and the Governor of the State acting on behalf of the State as follows:

ARTICLE I

Subject to the exceptions provided in Articles II, IV, and V, the Commission shall discontinue, as

of the effective date of this Agreement, the regulatory authority of the Commission in the State under Chapters, 7, and 8, and Section 161 of the Act with respect to the following materials:

A. Byproduct materials as defined in Section 11e.(2) of the Act except as specified in Article II.A.(14); and,

B. Source material involved in the extraction or concentration of uranium or thorium in source material and ores at uranium and thorium milling facilities.

ARTICLE II

A. This Agreement does not provide for the discontinuance of any authority, and the Commission shall retain authority and responsibility with respect to:

1. Byproduct material as defined in section 11e.(1) of the Act;

2. Byproduct material as defined in section 11e.(3) of the Act;

3. Byproduct material as defined in section 11e.(4) of the Act;

4. Source material except for source material involved in the extraction or concentration of source material at uranium or thorium milling facilities;

5. Special nuclear materials;

6. The regulation of the land disposal of byproduct, source, or special nuclear material received from other persons, excluding 11e.(2) byproduct material or source material described in Article I A and B of this Agreement;

7. The regulation of the construction and operation of any production or utilization facility or any uranium enrichment facility;

8. The regulation of the export from or import into the United States of byproduct, source, or special nuclear material, or of any production or utilization facility;

9. The regulation of the disposal into the ocean or sea of byproduct, source, or special nuclear materials waste as defined in the regulations or orders of the Commission;

10. The regulation of the disposal of such other byproduct, source, or special nuclear material as the Commission from time to time determines by regulation or order should, because of the hazards or potential hazards thereof, not to be so disposed without a license from the Commission;

11. The evaluation of radiation safety information on sealed sources or devices containing byproduct, source, or special nuclear materials and the registration of the sealed sources or devices for distribution, as provided for in regulations or orders of the Commission;

12. The regulation of activities not exempt from Commission regulation as stated in 10 C.F.R Part 150; and,

13. Laboratories not located at facilities licensed under the authority relinquished under Article I A and B of this Agreement.

14. Notwithstanding this Agreement, the NRC shall retain regulatory authority over the American Nuclear Corporation site docket number 40-4492.

B. Notwithstanding this Agreement, the Commission retains the following authorities pertaining to byproduct materials as defined in Section 11e.(2) of the Act:

1. Prior to the termination of a State license for such byproduct material, or for any activity that results in the production of such material, the Commission shall have made a determination that all applicable standards and requirements pertaining to such material have been met.

2. The Commission reserves the authority to establish minimum standards governing reclamation, long-term surveillance or maintenance, and ownership of such byproduct material and of land used as a disposal site for such material. Such reserved authority includes:

   a. The authority to establish terms and conditions as the Commission determines necessary to assure that, prior to termination of any license for such byproduct material, or for any activity that results in the production of such material, the licensee shall comply with decontamination, decommissioning, and reclamation standards prescribed by the Commission and with ownership requirements for such materials and its disposal site;

   b. The authority to require that prior to termination of any license for such byproduct material or for any activity that results in the production of such material, title to such byproduct material and its disposal site be transferred to the United States or the State at the option of the State (provided such option is exercised prior to termination of the license);

   c. The authority to permit use of the surface or subsurface estates, or both, of the land transferred to the United States or a State pursuant to paragraph 2.b. in this section in a manner consistent with the provisions of the Uranium Mill Tailings Radiation Control Act of 1978, provided that the Commission determines that such use would not endanger public health, safety, welfare, or the environment;

   d. The authority to require, in the case of a license for any activity that produces such byproduct material (which license was in effect on November 8, 1981), transfer of land and material pursuant to paragraph 2.b. in this section taking into consideration the status of such material and land and interests therein, and the ability of the licensee to transfer title and custody thereof to the United States or a State;

   e. The authority to require the Secretary of the United States Department of Energy, other Federal agency, or State, whichever has custody of such byproduct material and its disposal site, to undertake such monitoring, maintenance, and emergency measures as are necessary to protect public health and safety, and other actions as the Commission deems necessary; and

f. The authority to enter into arrangements as may be appropriate to assure Federal long-term surveillance or maintenance of such byproduct material and its disposal site on land held in trust by the United States for any Indian Tribe or land owned by an Indian Tribe and subject to a restriction against alienation imposed by the United States.

ARTICLE III

With the exception of those activities identified in Article II, A.1 through A.6, this Agreement may be amended, upon application by the State and approval by the Commission to include one or more of the additional activities specified in Article II, A.7, whereby the State may then exert regulatory authority and responsibility with respect to those activities.

ARTICLE IV

Notwithstanding this Agreement, the Commission may from time to time by rule, regulation, or order, require that the manufacturer, processor, or producer of any equipment, device, commodity, or other product containing source, byproduct, or special nuclear material shall not transfer possession or control of such product except pursuant to a license or an exemption for licensing issued by the Commission.

ARTICLE V

This Agreement shall not affect the authority of the Commission under Subsection 161b or 161i of the Act to issue rules, regulations, or orders to protect the common defense and security, to protect restricted data, or to guard against the loss or diversion of special nuclear material.

ARTICLE VI

The Commission will cooperate with the State and other Agreement States in the formulation of standards and regulatory programs of the State and the Commission for protection against hazards of radiation and to assure that Commission and State programs for protection against hazards of radiation will be coordinated and compatible. The State agrees to cooperate with the Commission and other Agreement States in the formulation of standards and regulatory programs of the State and the Commission for protection against hazards of radiation and to assure that the State's program will continue to be compatible with the program of the Commission for the regulation of materials covered by this Agreement.

The State and the Commission agree to keep each other informed of proposed changes in their respective rules and regulations, and to provide each other the opportunity for early and substantive contribution to the proposed changes.

The State and the Commission agree to keep each other informed of events, accidents, and licensee performance that may have generic implication or otherwise be of regulatory interest.

ARTICLE VII

The Commission and the State agree that it is desirable to provide reciprocal recognition of licenses for the materials listed in Article I licensed by the other party or by any other Agreement State.

Accordingly, the Commission and the State agree to develop appropriate rules, regulations, and procedures by which reciprocity will be accorded.

ARTICLE VIII

The Commission, upon its own initiative after reasonable notice and opportunity for hearing to the State, or upon request of the Governor of the State, may terminate or suspend all or part of this agreement and reassert the licensing and regulatory authority vested in it under the Act if the Commission finds that (1) such termination or suspension is required to protect public health and safety, or (2) the State has not complied with one or more of the requirements of Section 274 of the Act. The Commission may also, pursuant to Section 274j of the Act, temporarily suspend all or part of this agreement if, in the judgment of the Commission, an emergency situation exists requiring immediate action to protect public health and safety and the State has failed to take necessary steps. The Commission shall periodically review actions taken by the State under this Agreement to ensure compliance with Section 274 of the Act which requires a State program to be adequate to protect public health and safety with respect to the materials covered by this Agreement and to be compatible with the Commission's program.

ARTICLE IX

In the licensing and regulation of byproduct material as defined in Section 11e.(2) of the Act, or of any activity which results in production of such material, the State shall comply with the provisions of Section 274o of the Act. If in such licensing and regulation, the State requires financial surety arrangements for reclamation or long-term surveillance and maintenance of such material.

A. The total amount of funds the State collects for such purposes shall be transferred to the United States if custody of such material and its disposal site is transferred to the United States upon termination of the State license for such material or any activity which results in the production of such material.

Such funds include, but are not limited to, sums collected for long-term surveillance or maintenance. Such funds do not, however, include monies held as surety where no default has occurred and the reclamation or other bonded activity has been performed; and,

B. Such surety or other financial requirements must be sufficient to ensure compliance with those standards established by the Commission pertaining to bonds, sureties, and financial arrangements to ensure adequate reclamation and long-term management of such byproduct material and its disposal site.

ARTICLE X

This Agreement shall become effective on [date], and shall remain in effect unless and until such time as it is terminated pursuant to Article VIII.

Done at [City, State] this [date] day of [month], [year].

FOR THE UNITED STATES NUCLEAR REGULATORY COMMISSION

_____, Chairman

FOR THE STATE OF WYOMING

_____, Governor

Subsection 4.2

Regulatory Requirements Program Elements

Department of Environmental Quality

WYOMING

4.2.1 Regulatory Requirements

The Uranium Recovery Program within the Land Quality Division of the Wyoming Department of Environmental Quality (WDEQ) has developed regulations that meet Nuclear Regulatory Commission (NRC) criteria as defined in NRC guidance SA-700, Appendix A; *Handbook for Processing an Agreement*. Where applicable, the federal regulations governing the scope of material sought by Wyoming were adopted by reference. The Uranium Recovery Program Rules, along with the compatibility tables for the Federal Rules, are attached in Appendices A and B of this subsection.

SA 700. *Handbook for Processing an Agreement*

4.2 Regulatory Requirements Program Elements

4.2.1 Standards for Protection Against Radiation

(a) The standards for protection against radiation include;

(1) The dose limits for occupationally exposed persons and members of the public;

- Uranium Recovery Program Rules, Chapter 3, *Radiation Protection Standards* (Adoption of 10 C.F.R. Part 20 by reference)

(2) Limits on the concentration and quantity of materials released to the environment; and

- Uranium Recovery Program Rules, Chapter 3, *Radiation Protection Standards* (Adoption of 10 C.F.R Part 20 Appendix B by reference)

(3) Technical definitions and terminology; units of radioactivity and radiation dose; radiation symbols, labels, and warning signs.

- Technical Definitions and Terminology- Uranium Recovery Program Rules, Chapter 1, *General Provisions;*
- Units of radioactivity and radiation dose- Uranium Recovery Program Rules, Chapter 1, *General Provisions*, Section 7 & 8; and
- Radiation symbols, labels, and warning signs- Uranium Recovery Program Rules, Chapter 3, *Radiation Protection Standards* (Adoption of 10 C.F.R Part 20 by reference)

4.2.1.1 Information needed

(a) The State should submit its regulations, or generic legally binding requirements, that prescribe the standards for protection against radiation. The State should submit its regulations or generic legally binding requirements for categories of material being requested under the Agreement; and

- See Appendix A Uranium Recovery Program Rules

(b) If the State wants to regulate the disposal of low-level radioactive waste at a land disposal site, it should submit its regulations equivalent of Section 61.41, 61.42. and 61.43.

- The State is not seeking authority over low-level radioactive waste, therefore regulations equivalent to Section 61.41, 61.42, and 61.43 will not be provided.

4.2.1.2 Evaluation Criteria

(a) The State standards for protection against radiation must satisfy the criteria from compatibility Category A. The criteria are given in the Handbook to MD 5.9. A list of program elements and their compatibility or adequacy designation is provided in State Agreement Procedure SA-200, Appendix A. Appendix A includes a link to the NRC regulations by 10 C.F.R Part, with a link to a table with the compatibility designation assigned to each regulation. Additional guidance for submitting State regulations for the NRC review is provided in State Agreement Procedure SA-201, *Review of State Regulatory Requirements*;

- See Appendix A Uranium Recovery Program Rules
- See Appendix B Compatibility Tables

(b) The standards must apply to all categories of materials covered by the Agreement. They should also apply to all other sources of radiation regulated by the State. The standards must require consideration of the total occupational dose to individuals; and

- See Appendix A Uranium Recovery Program Rules
- See Appendix B Compatibility Tables

(c) If the State adopts generic legally binding requirements other than regulations, the program staff should apply generic legally binding requirements consistently. The requirements should not confuse either the licensees or the regulatory program staff. The State must show that the alternative requirements are legally binding under State law.

- See Appendix A Uranium Recovery Program Rules
- See Appendix B Compatibility Tables

4.2.2 Regulatory Requirements with Significant Transboundary Implications

(a) The regulatory requirements with significant transboundary implications are, in part, related to:

1. Regulations that affect the movement of materials across State borders;

- See Appendix A Uranium Recovery Program Rules
- See Appendix B Compatibility Table

2. Certain other regulations such as the limits for quantities and concentrations of materials where the end user is exempt from licensing. The State should submit its regulations or generic legally binding requirements for all categories of material being requested under the Agreement; and

- See Appendix A Uranium Recovery Program Rules
- See Appendix B Compatibility Tables

3. Other requirements where a consistent nationwide approach is necessary.

- See Appendix A Uranium Recovery Program Rules
- See Appendix B Compatibility Tables

4.2.2.1 Information Needed

(a) The State should submit its regulations, or generic legally binding requirements, that prescribe the regulatory requirements with significant transboundary implications. The State should submit its regulations or generic legally binding requirements for all categories of material being requested under the agreement.

- See Appendix A Uranium Recovery Program Rules
- See Appendix B Compatibility Tables

4.2.2.2 Evaluation Criteria

(a) The State regulatory requirements with significant transboundary implications must satisfy the criteria for compatibility category B. The criteria are given in the Handbook to MD 5.9. A list of program elements and their compatibility designation is provided in State Agreement Procedure SA-200, Appendix A. Appendix A includes a link to the NRC regulations by 10 C.F.R Part, with a link to table with a link to a table with the compatibility designation assigned to each regulation. Additional guidance for submitting State regulations for the NRC review is provided in State Agreement Procedure 201, *Review of State Regulatory Requirements*; and

- See Appendix A Uranium Recovery Program Rules
- See Appendix B Compatibility Tables

(b) If the State adopts the NRC regulations by reference, the State rule should disclaim any intent to regulate materials or activities over which the NRC retains jurisdiction. If the State adopts generic legally binding requirements other than regulations, the program staff should apply generic legally binding requirements consistently. The requirements should not confuse either the licensees or the regulatory program staff. The State must show that the alternative requirements are legally binding under State law.

- See Appendix A Uranium Recovery Program Rules
- See Appendix B Compatibility Tables

4.2.3 Regulatory Requirements Needed for an Orderly Pattern of Regulations

(a) The regulatory requirements needed for an orderly pattern of regulation are regulations that an Agreement State should adopt to avoid conflict, duplication, gaps, or other conditions that would jeopardize an orderly pattern in the regulation of agreement material on a nationwide basis and that, if not adopted, would result in undesirable consequences. Examples of such consequences are given in MD 5.9 Handbook, Part II, Section C. An Agreement State should adopt the essential objectives of the NRC regulations.

- See Appendix A Uranium Recovery Program Rules
- See Appendix B Compatibility Tables

4.2.3.1 Information Needed

(a) The State should submit its regulations or generic legally binding requirements that apply the essential objectives of the NRC regulations designated compatibility category C. The State should submit its regulations or generic legally binding requirements for all categories of material being requested under the Agreement; and

- See Appendix A Uranium Recovery Program Rules
- See Appendix B Compatibility Tables

(b) If the State wants to regulate uranium and thorium mill tailings, it should submit a copy of its requirements equivalent to 10 C.F.R Part 40, Appendix A.

- See Appendix A Uranium Recovery Program Rules
- See Appendix B Compatibility Tables

4.2.3.2 Evaluation Criteria

(a) The State regulations or generic legally binding requirements needed for an orderly pattern of regulation must satisfy the criteria for capability category C. The criteria are given in the Handbook to MD 5.9. A list of program elements and their compatibility designation is provided in State Agreement Procedure SA-200, Appendix A. Appendix A includes a link to the NRC regulations, by 10 C.F.R Part, with a link to a table with the compatibility designation assigned to each regulation. Additional guidance for submitting State regulations for the NRC review is provided in State Agreement Procedure SA-201, *Review of State Regulatory Requirements* ; and

- See Appendix A Uranium Recovery Program Rules
- See Appendix B Compatibility Tables

(b) If the State adopts the NRC regulations by reference, the State regulations should disclaim any intent to regulate materials or activities over which the NRC retains jurisdiction. If the State adopts generic legally binding requirements other than regulations, the program staff should apply generic legally binding requirements consistently. The requirements should not confuse either the licensees or the regulatory program staff. The State must show that the alternative requirements are legally binding under State law.

- See Appendix A Uranium Recovery Program Rules
- See Appendix B Compatibility Tables

4.2.4 Regulatory Requirements that have a Particular Health and Safety Significance

(a) The regulatory requirements which have particular health and safety significance are regulations that are needed for health and safety (H&S). These are the NRC program elements that are not required for compatibility but have been identified as having a particular health and safety role in the regulation of agreement material within the State. The State should adopt program elements based on those of the NRC that embody the essential objective of the NRC program elements. Examples are given in MD 5.9 Handbook, Part II, Section E.

- See Appendix A Uranium Recovery Program Rules
- See Appendix B Compatibility Tables

4.2.4.1 Information Needed

(a) The State should submit its regulations or generic legally binding requirements that apply the essential objectives of the NRC regulations designated as H&S. The State should submit its regulations or generic legally binding requirements for all categories of materials being requested under the agreement.

- See Appendix A Uranium Recovery Program Rules
- See Appendix B Compatibility Tables

4.2.4.2 Evaluation Criteria

(a) The State regulations or generic legally binding requirements needed for health and safety must meet the criteria for the category H&S. The criteria are given in the Handbook to MD 5.9. A list of program elements and their compatibility designation is provided in State Agreement Procedure SA-200, Appendix A. Appendix A includes a link to the NRC regulations, by 10 C.F.R Part, with a link to a table with the compatibility designation assigned to each regulation. Additional guidance for submitting State regulations for the NRC review is provided in State Agreement Procedure SA-201, *Review of State Regulatory Requirements*.

- See Appendix A Uranium Recovery Program Rules
- See Appendix B Compatibility Tables

(b) If the State adopts the NRC regulations by reference, the State regulations should disclaim any intent to regulate materials or activities over which the NRC retains jurisdiction. If the State adopts generic legally binding requirements other than regulations, the program staff should apply generic legally binding requirements consistently. The requirements should not confuse either the licensee or the regulatory program staff. The State must show that the alternative requirements are legally binding under State Law.

- See Appendix A Uranium Recovery Program Rules
- See Appendix B Compatibility Tables

Appendix A to Subsection 4.2
Uranium Recovery Program Rules

Department of Environmental Quality

WYOMING

CHAPTER 1

GENERAL PROVISIONS

Section 1. **Authority.**

(a) These rules and regulations are promulgated pursuant to the Wyoming Environmental Quality Act, Wyoming Statute (W.S.) §§ 35-11-2001 *et seq*. These rules and regulations are effective upon filing with the Secretary of State.

Section 2. **Purpose.**

(a) It is the purpose of these rules to state such requirements as shall be applied in the use of source material involved in the extraction or concentration of uranium or thorium in source material and ores at uranium or thorium milling facilities and the management and disposal of associated byproduct material (referred to throughout these rules as licensed material) such that the Department can ensure the protection of the public health and safety to all persons at, or in the vicinity of, the place of use, storage, or disposal.

Section 3. Scope.

(a) Except as otherwise specifically provided, these rules apply to all persons who receive, possess, use, offer and receive for transfer, own, or acquire any source material involved in the extraction or concentration of uranium or thorium in source material and ores at uranium or thorium milling facilities and the management and disposal of associated byproduct material. Nothing in these rules shall apply to any person to the extent such person is subject to regulation not relinquished by the United States Nuclear Regulatory Commission (NRC). These rules do not govern the mining or removal of source material in its natural state or independent or commercial laboratory facilities that possess, use, or accept byproduct or source material.

Section 4. Incorporation by Reference (IBR) of Code of Federal Regulations (C.F.R.)

(a) AVAILABILITY OF REFERENCED MATERIAL. The federal rules adopted by reference throughout these rules are maintained at the following locations:

(i) Electronic copies of the federal rules adopted by reference throughout these rules may be obtained from the U.S. Government Printing Office, http://www.ecfr.gov; and

(ii) Volumes of the federal rules adopted by reference throughout these rules are available for public inspection at the Wyoming Department of Environmental Quality, Uranium Recovery Program, 200 West 17th Street, Suite 10, Cheyenne, Wyoming 82002. Printed copies of the federal rules adopted by reference throughout these rules are also available at cost from the U.S. Government Printing Office, 732 North Capitol Street Northwest, Washington D.C. 20401 or at http://bookstore.gpo.gov/catalog/laws-regulations/code-federal-regulations-cfrs-print. Copies of the federal rules adopted by reference throughout these rules

may be requested at cost through the Wyoming Department of Environmental Quality, which will order the materials from the U.S. Government Printing Office.

Section 5. Definitions.

The following terms, as used in these rules and regulations shall, unless the context otherwise requires, have the following meanings:

(a) "Absorbed Dose" means the energy imparted by ionizing radiation per unit mass of irradiated material. The units of absorbed dose are the rad and the gray (Gy).

(b) "Act" means Environmental Quality Act, W.S. §§ 35-11-103 *et seq.*

(c) "Action Limits" means the minimum and maximum values of a quality assurance measurement that can be interpreted as representing acceptable performance with respect to the parameter being tested. Values less than the minimum or greater than the maximum action limit or level indicate that corrective action must be taken. Action limits or levels are also sometimes called control limits or levels.

(d) "Activity" means the rate of disintegration (transformation) or decay of radioactive material. The units of activity are the curie (Ci) and the bequerel (Bq).

(e) "Adult" means an individual 18 or more years of age.

(f) "Agreement State" means a state with which the Atomic Energy Commission or the Nuclear Regulatory Commission has entered into an effective agreement under Section 274(b) of the Atomic Energy Act of 1954 (AEA), as amended (42 U.S.C. § 2021). Nonagreement State means any other State.

(g) "Airborne Radioactive Material" means a radioactive material dispersed in the air in the form of dusts, fumes, particulates, mists, vapors, or gases.

(h) "Airborne Radioactivity Area" means a room, enclosure, or area in which airborne radioactive materials, composed wholly or partly of licensed material, exists in concentrations:

(i) In excess of the derived air concentrations (DACs), specified in 10 C.F.R. Part 20, Appendix B, or

(ii) To such a degree that an individual present in the area without respiratory protective equipment could exceed, during the hours an individual is present in a week, an intake of 0.6 percent of the annual limit on intake (ALI), or 12 DAC hours.

(i) "Air-Purifying Respirator" means a respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

(j) "Alert" means events may occur, are in progress, or have occurred that could lead to a release of radioactive material but that the release is not expected to require a response by offsite

response organizations to protect persons offsite.

(k) "Alternate Feed Processing" means the processing of any matter other than mined natural or native matter from which source material [i.e. uranium or thorium] is extracted in a licensed uranium or thorium mill as authorized by RIS 00-023: Recent Changes to Uranium Recovery Policy dated November 30, 2000 and NRC regulatory Issue Summary 2012-06 NRC Policy Regarding Submittal of Amendments for Processing of Equivalent Feed at Licensed Uranium Recovery Facilities, dated April 16, 2012.

(l) "Annual Limit on Intake (ALI)" means the derived limit for the amount of radioactive material taken into the body of an adult worker by inhalation or ingestion in a year. ALI is the smaller value of intake of a given radionuclide in a year by the reference man that would result in a committed effective dose equivalent of 5 rems (0.05 Sv) or a committed dose equivalent of 50 rems (0.5 Sv) to any individual organ or tissue. (ALI values for intake by ingestion and by inhalation of selected radionuclides are given in Table 1, Columns 1 and 2, of Appendix B to 10 CFR Part 20).

(m) "As Low as Reasonably Achievable (ALARA)" means making every reasonable effort to maintain exposures to radiation as far below the dose limits as is practical, consistent with the purpose for which the licensed activity is undertaken, taking into account the state of technology, the economics of improvements in relation to state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to utilization of nuclear energy and licensed materials in the public interest.

(n) "Assigned Protection Factor (APF)" means the expected workplace level of respiratory protection that would be provided by a properly functioning respirator or a class of respirators to properly fitted and trained users. Operationally, the inhaled concentration can be estimated by dividing the ambient airborne concentration by the APF.

(o) "Atmosphere-Supplying Respirator" means a respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere, and includes supplied-air respirators (SARS) and self-contained breathing apparatus (SCBA) units.

(p) "Background Radiation" means radiation from:

(i) Cosmic sources;

(ii) Naturally occurring radioactive materials, including radon (except as a decay product of source or special nuclear material); and

(iii) Global fallout as it exists in the environment from the testing of nuclear explosive devices or from past nuclear accidents such as Chernobyl that contribute to background radiation and are not under the control of the licensee.

Background radiation does not include sources of radiation from radioactive materials regulated by the NRC or agreement states.

(q) "Becquerel (Bq)" means the SI unit of activity. One (1) becquerel is equal to one (1) disintegration or transformation per second.

(r) "Bioassay" means the determination of kinds, quantities or concentrations, and in some cases, the locations of radioactive material in the human body, whether by direct measurement (in vivo counting) or by analysis and evaluation of materials excreted or removed from the human body. For purposes of these rules, "radiobioassay" is an equivalent term.

(s) "Byproduct Material" means the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content as defined in section 11e. (2) of the AEA (42 U.S.C § 2014(e)(2) (2015)).

(t) "Calibration" means the determination of:

(i) The response or reading of an instrument relative to a series of known radiation values over the range of the instrument; or

(ii) The strength of a source of radiation relative to a standard.

(u) "Class (or lung class or inhalation class)" means a classification scheme for inhaled material according to its rate of clearance from the pulmonary region of the lung. Materials are classified as D, W, or Y, which applies to a range of clearance half-times; for Class D (Days) of less than 10 days, for Class W (weeks) from 10 to 100 days, and Class Y (years) of greater than 100 days.

(v) "Collective Dose" means the sum of the individual doses received in a given period of time by a specified population from exposure to a specified source of radiation.

(w) "Commencement of Construction" means taking any action defined as construction or any other activity at the site of a facility subject to these rules that has a reasonable nexus to radiological health or safety.

(x) "Commission" means the U.S. Nuclear Regulatory Commission or its duly authorized representatives. “Nuclear Regulatory Commission” and “NRC” are equivalent terms.

(y) "Committed Dose Equivalent ($H_{T,50}$)" means the dose equivalent to organs or tissues of reference (T) that will be received from an intake of radioactive material by an individual during the 50-year period following the intake.

(z) "Committed Effective Dose Equivalent ($H_{E,50}$)" is the sum of the products of the weighting factors applicable to each of the body organs or tissues that are irradiated and the committed dose equivalent to each of these organs or tissues ($H_{E50}=\sum W_T H_{T50}$).

(aa) "Constraint (dose constraint)" means a value above which specified licensee actions are required.

(ab) "Construction" means the installation of wells associated with the radiological operations (e.g., production, injection, or monitoring well networks associated with in-situ recovery

or other facilities), the installation of foundations, or in-place assembly, erection, fabrication, or testing for any structure, system, or component of a facility or activity subject to these rules and regulations that are related to radiological safety or security. The term "construction" does not include:

(i) Changes for temporary use of the land for public recreational purposes;

(ii) Site exploration, including necessary borings to determine foundation conditions or other preconstruction monitoring to establish background information related to the suitability of the site, the environmental impacts of construction or operation, or the protection of environmental values;

(iii) Preparation of the site for construction of the facility, including clearing of the site, grading, installation of drainage, erosion, and other environmental mitigation measures, and construction of temporary roads and borrow areas;

(iv) Erection of fences and other access control measures that are not related to the safe use of, or security of, radiological materials subject to these rules;

(v) Excavation;

(vi) Erection of support buildings (e.g. construction equipment storage sheds, warehouses and shop facilities, utilities, concrete mixing plants, docking and unloading facilities, and office buildings) for use in connection with the construction of the facility;

(vii) Building of service facilities (e.g., paved roads, parking lots, railroad spurs, exterior utility, and lighting systems, potable water systems, sanitary sewerage treatment facilities, and transmission lines);

(viii) Procurement or fabrication of components or portions of the proposed facility occurring at other than the final, in place location at the facility; or

(ix) Taking any other action that has no reasonable nexus to radiological health and safety.

(ac) "Contamination" means the presence of radioactive substance on a surface in quantities in excess of unrestricted release limits. For limits on transportation please refer to 10 C.F.R. § 71.4. For uranium recovery operations please refer to Regulatory Guide 8.30 Health Physics Surveys in Uranium Recovery Facilities Section 2.5, Table 2 Revision 1 May 2002, which states that contamination exists in two phases. Additionally for areas where beta and gamma contamination exist please refer to the references in Table 2 of Regulatory Guide 8.30.

(i) Fixed radioactive contamination means radioactive contamination that cannot be removed from a surface during normal conditions.

(ii) Non-fixed or removable radioactive contamination means radioactive contamination that can be removed from a surface during normal conditions.

(ad) "Controlled Area" means an area, outside of a restricted area but inside the site boundary, access to which can be limited by the licensee for any reason.

(ae) "Critical Group" means the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances.

(af) "Curie" means the special unit of activity. One curie is equal to $3.7x10^{10}$ disintegrations per second which is equal to $3.7x10^{10}$ becquerels which is equal to $2.22x10^{12}$ disintegrations per minute.

(ag) "Declared Pregnant Woman" means a woman who has voluntarily informed the licensee, in writing, of her pregnancy and the estimated date of conception. The declaration remains in effect until the declared pregnant woman withdraws the declaration in writing or is no longer pregnant.

(ah) "Decommission" means to remove a facility or site safely from service and reduce residual radioactivity to a level that permits:

(i) Release of property for unrestricted use and termination of the license; or

(ii) Release of the property under restricted conditions and termination of the license.

(ai) "Deep Dose Equivalent (H_d)," which applies to external whole body exposure, means the dose equivalent at a tissue depth of 1cm (1000 mg/cm2).

(aj) "Demand Respirator" means an atmosphere-supplying respirator that admits breathing air to the facepiece only when negative pressure is created inside the facepiece by inhalation.

(ak) "Department" means the State of Wyoming Department of Environmental Quality.

(al) "Derived Air Concentration (DAC)" means the concentration of given radionuclide in air which, if breathed by reference man for a working year of 2,000 hours under conditions of light work (inhalation rate of 1.2 cubic meters of air per hour), results in an intake of 1 ALI. DAC values are given in 10 C.F.R. Part 20, Appendix B, Table 1 Column 3.

(am) "Derived Air Concentration–Hour (DAC-Hour)" means the product of the concentration of radioactive material in air (expressed as a fraction or multiple of the derived air concentration for each radionuclide) and the time of exposure to that radionuclide, in hours. A licensee may take 2,000 DAC-hours to represent 1 ALI equivalent to a committed effective dose equivalent of 5 rems (0.05 Sv).

(an) "Direct Disposal" means disposal of non-11e.(2) byproduct material in a uranium mill tailings impoundment as authorized by RIS 00-023: Recent Changes to Uranium Recovery Policy dated November 30, 2000.

(ao) "Discrete source" means a radionuclide that has been processed so that its

concentration within a material has been purposely increased for use for commercial, medical, or research activities.

(ap) "Disposable Respirator" means a respirator for which maintenance is not intended and that is designed to be discarded after excessive breathing resistance, sorbent exhaustion, physical damage, or end of service life renders it unsuitable for use. Examples of this type of respirator are disposable half-mask respirators or disposable escape-only self-contained breathing apparatus (SCBA).

(aq) "Distinguishable from Background" means that the detectable concentration of a radionuclide is statistically different from the background concentration of that radionuclide in the vicinity of the site or, in the case of structures, in similar materials using adequate measurement technology, survey, and statistical techniques.

(ar) "Dose" is a generic term that means absorbed dose, dose equivalent, effective dose equivalent, committed dose equivalent, committed effective dose equivalent, or total effective dose equivalent. For purposes of these rules, "radiation dose" is an equivalent term.

(as) "Dose Equivalent (H_T)" means the product of the absorbed dose in tissue, quality factor, and all other necessary modifying factors at the location of interest. The units of dose equivalent are the rem and sievert (Sv).

(at) "Dose Limits" means the permissible upper bounds of radiation doses established in accordance with these rules. For purpose of these rules, "limits" is an equivalent term.

(au) "Dosimetry Processor" means an individual or organization, that is National Voluntary Laboratory Accreditation Program (NAVLAP) approved, that processes and evaluates individual monitoring equipment in order to determine the radiation dose delivered to the equipment.

(av) "Effective Dose Equivalent (H_E)" means the sum of the products of the dose equivalent to the organ or tissue (H_T), and the weighting factor (W_T), applicable to each of the body organs or tissues that are irradiated ($H_E = \sum W_T H_T$).

(aw) "Embryo/Fetus" means the developing human organism from conception until the time of birth.

(ax) "Entrance or Access Point" means any location through which an individual could gain access to radiation areas or to licensed radioactive materials. This includes entry or exit portals of sufficient size to permit human entry, irrespective of their intended use.

(ay) "Equivalent Feed" refers to ion exchange (IX) resin that is loaded with uranium at facilities licensed for source material (i.e. water treatment plants or mine dewatering operations) or licensed uranium recovery facilities whether conventional, heap leach, or ISR facilities. RIS 2012-06 NRC Policy Regarding Submittal of Amendments for Processing of Equivalent Feed at Licensed Uranium Recovery Facilities details the permitting of equivalent feed at uranium recovery operations.

(az) "Exclusive Use" means the sole use by a single consignor or a conveyance for which all initial, intermediate, and final loading and unloading are carried out in accordance with the direction of the consignor or consignee. The consignor and the carrier must ensure that any loading or unloading is performed by personnel having radiological training and resources appropriate for safe handling of the consignment. The consignor must issue specific instructions, in writing, for maintenance of exclusive use shipment controls, and include them with the shipping paper information provided to the carrier by the consignor.

(ba) "Exposure" means being exposed to ionizing radiation or to radioactive material. For purposes of these rules, this term is used as a verb.

(bb) "Exposure Rate" means the exposure per unit of time, such as roentgen per minute and milliroentgen per hour.

(bc) "External Dose" means that portion of the dose equivalent received from a source of radiation outside the body.

(bd) "Extremity" means hand, elbow, arm below the elbow, foot, knee, and leg below the knee.

(be) "Financial Assurance" means the method of assuring that sufficient funds will be available at the time of license termination and decommissioning of the facility to cover all costs associated with the decommissioning.

(bf) "Filtering Facepiece (dust mask)" means a negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium, not equipped with elastomeric sealing surfaces and adjustable straps.

(bg) "Fit Factor" means a quantitative estimate of the fit of a particular respirator to a specific individual, and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

(bh) "Fit Test" means the use of protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual.

(bi) "Generally Applicable Environmental Radiation Standards" means standards issued by the U.S. Environmental Protection Agency under the authority of the AEA, as amended, that impose limits on radiation exposures or levels, or concentrations or quantities of radioactive material, in the general environment outside the boundaries of locations under the control of persons possessing or using radioactive material.

(bj) "Helmet" means a rigid respiratory inlet covering that also provides head protection against impact and penetration.

(bk) "High Radiation Area" means an area, accessible to individuals, in which radiation levels from radiation sources external to the body could result in an individual receiving a dose equivalent in excess of 0.1 rem (1mSv), in 1 hour at 30 centimeters from the radiation source or 30 centimeters from any surface that the radiation penetrates.

(bl) "Hood" means a respiratory inlet covering that completely covers the head and neck and may also cover portions of the shoulders and torso.

(bm) "Individual" means any human being.

(bn) "Individual monitoring" means:

(i) The assessment of dose equivalent by:

(A) Use of devices designed to be worn by an individual, or

(B) Survey data.

(ii) The assessment of committed effective dose equivalent by:

(A) Bioassay, or

(B) By determination of the time-weighted air concentrations to which an individual has been exposed (i.e. DAC-hours).

(bo) "Individual Monitoring Devices" means devices designed to be worn by a single individual for the assessment of dose equivalent. For purposes of these rules, individual monitoring equipment and personnel monitoring equipment are equivalent terms. Examples of individual monitoring devices are film badges, thermoluminescence dosimeters (TLD's), pocket ionization chambers, and personal air sampling devices.

(bp) "Internal Dose" means that portion of the dose equivalent received from radioactive material taken into the body.

(bq) "Lens Dose Equivalent (LDE)" means the external exposure of the lens of the eye and is taken as the dose equivalent at a tissue depth of 0.3 centimeter (300 mg/cm2).

(br) "License" means a form of permission given by the Department to an applicant who has met the requirements for licensing set out in the Act and these rules.

(bs) "Licensee" means a person who is licensed by the Department in accordance with the Act and these rules.

(bt) "Licensed material" means source material involved in the extraction or concentration of uranium or thorium in source material and ores at uranium or thorium milling facilities and the management and disposal of associated byproduct material received, possessed, used, transferred, or disposed of under a license issued by the Department.

(bu) "Limits (dose limits)" means the permissible upper bounds of radiation doses.

(bv) "Loose Fitting Facepiece" means a respiratory inlet covering that is designed to form a partial seal with the face.

(bw) "Lost or Missing Licensed Material" means licensed material whose location is

unknown. It includes material that has been shipped but has not reached its destination and whose location cannot be readily traced in the transportation system.

(bx) "Low Specific Activity (LSA) Material" means radioactive material with limited specific activity which is non-fissile or is accepted under 10 C.F.R. § 71.15, and which satisfies the description and limits set forth in Chapter 9 of these Rules. Shielding materials surrounding the LSA material may not be considered in determining the estimated average specific activity of the package contents. The LSA material must be in one of three groups.

(i) LSA-I:

(A) Uranium and thorium ores, concentrates of uranium and thorium ores, and other ores containing naturally occurring radionuclides that are intended to be processed for the use of these radionuclides;

(B) Natural uranium, depleted uranium, natural thorium or their compounds or mixtures, provided they are unirradiated and in solid or liquid form;

(C) Radioactive material other than fissile material, for which the A_2 value is unlimited; or

(D) Other radioactive material in which the activity is distributed throughout and the estimated average specific activity does not exceed 30 times the value for exempt material activity concentration determined in accordance with 10 C.F.R. Part 71, Appendix A.

(ii) LSA-II:

(A) Water with tritium concentration up to 0.8 TBq/liter (20.0 Ci/liter), or

(B) Other radioactive material in which the activity is distributed throughout and the estimated average specific activity does not exceed 10^{-4} A_2/g for solids and gases, and 10^{-5} A_2/g for liquids.

(iii) LSA-III Solids (e.g., consolidated wastes, activated materials), excluding powders, that satisfy the requirements of 10 C.F.R. § 71.77, in which:

(A) The radioactive material is distributed throughout a solid or collection of solid objects, or is essentially uniformly distributed in a solid compact binding agent (such as concrete, bitumen, ceramic, etc.);

(B) The radioactive material is relatively insoluble, or it is intrinsically contained in a relative insoluble material, so that even under loss of packaging, the loss of radioactive material per package by leaching, when placed in water for 7 days will not exceed 0.1 A_2; and

(C) The estimated average specific activity of the solid, excluding any shielding material, does not exceed 2×10^{-3} A_2/g.

(by) "Member of the Public" means an individual except when that individual is receiving an occupational dose.

(bz) "Minor" means an individual less than 18 years of age.

(ca) "Monitoring" means the measurement of radiation levels, concentrations, surface area concentrations or quantities of radioactive material, and the use of the results of these measurements to evaluate potential exposures and doses. For purposes of these rules, radiation monitoring and radiation protection monitoring are equivalent terms.

(cb) "Natural Thorium" means thorium with the natural occurring distribution of thorium isotopes (essentially 100 weight percent thorium-232).

(cc) "Natural Uranium" means uranium (which may be chemically separated) with the naturally occurring distribution of uranium isotopes (approximately 0.711 weight percent uranium-235 and the remainder by weight essentially uranium-238).

(cd) "Negative Pressure Respirator (tight fitting)" means a respirator in which the air pressure inside the facepiece is negative during inhalation with respect to the ambient air pressure outside the respirator.

(ce) "Nonstochastic Effect" means health effects, the severity of which varies with the dose and for which a threshold is believed to exist. Radiation-induced cataract formation is an example of a nonstochastic effect (also called a deterministic effect). For the purposes of these rules deterministic effects are equivalent terms.

(cf) "Occupational Dose" means the dose received by an individual in the course of employment in which the individual's assigned duties involve exposure to radiation or to radioactive material from licensed and unlicensed sources of radiation, whether in the possession of the licensee or other person. An Occupational dose does not include doses received from background radiation, from any medical administration the individual has received, from exposure to individuals administered radioactive material and released under 10 C.F.R. Part § 35.75, from voluntary participation in medical research programs, or as a member of the public.

(cg) "Operation" means all of the activities, equipment, premises, facilities, structures, roads, right-of-way, waste and refuse areas, storage and processing areas, and shipping areas used in the process of excavating or removing overburden and minerals from the affected land or for removing overburden for the purpose of determining the location, quality or quantity of natural, deposit or for the reclamation of affected lands.

(ch) "Person" means an individual, partnership, firm, association, joint venture, public or private corporation, trust, estate, commission, board, public or private institution, utility, cooperative, municipality or any other political subdivision of the State, or any interstate body or any other legal entity.

(ci) "Physician" means a medical doctor or doctor of osteopathy licensed by a State or Territory of the United States, the District of Columbia, or the Commonwealth of Puerto Rico to prescribe drugs in the practice of medicine.

(cj) "Positive Pressure Respirator" means a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.

(ck) "Powered air-purifying respirator (PAPR)" means an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

(cl) "Pressure Demand Respirator" means a positive pressure atmosphere-supplying respirator that admits breathing air to the facepiece when the positive pressure is reduced inside the facepiece by inhalation.

(cm) "Principal Activities" as used in these rules, means activities authorized by the license which are essential to achieving the purpose(s) for which the license was issued or amended. Storage during which no licensed material is accessed for use or disposal and activities incidental to decontamination or decommissioning are not principal activities

(cn) "Program" means the State of Wyoming's Uranium Recovery Program.

(co) "Public Dose" means the dose received by a member of the public from exposure to radiation or to radioactive materials released by a licensee, or to any other source of radiation under the control of a licensee. Public dose does not include occupational dose or doses received from background radiation, from any medical administration the individual has received, from exposure to individuals administered radioactive material and released in accordance with 10 C.F.R. § 35.75, or from voluntary participation in medical research programs.

(cp) "Qualitative Fit Test (QLFT)" means a pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to a test agent.

(cq) "Quality factor (Q)" means the modifying factor, listed in Tables 1 of Section 7 of this Chapter and Table 1004(b).2 of 10 CFR 20.1004, that is used to derive dose equivalent from absorbed dose.

(cr) "Quantitative Fit Test (QNFT)" means an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

(cs) "Quarter" means a period of time equal to one-fourth of the year observed by the licensee (approximately 13 consecutive weeks), providing that the beginning of the first quarter in a year coincides with the starting date of the year and that no day is omitted or duplicated in consecutive quarters.

(ct) "Radiation" means alpha particles, beta particles, gamma rays, x-rays, neutrons, high speed electrons, high speed protons, and other particles capable of producing ions. For purposes of these rules, ionizing radiation is an equivalent term. Radiation, as used in these rules, does not include non-ionizing radiation, such as radio or microwaves, visible, infrared, or ultraviolet light.

(cu) "Radiation Area" means an area, accessible to individuals, in which radiation levels could result in an individual receiving a dose equivalent in excess of 0.005 rem (0.05 mSv), in 1 hour at 30 centimeters from the radiation source or from any surface that the radiation penetrates.

(cv) "Radiation Level" means the radiation dose-equivalent expressed in millisieverts per hour or mSv/h (millirems per hour or mrem/h).

(cw) "Radioactivity" means the transformation of unstable atomic nuclei by the emission of radiation.

(cx) "Recovery or Milling" refers to the definition in W.S. § 35-11-103.

(cy) "Reference Man" means a hypothetical aggregation of human physical and physiological characteristics arrived at by international consensus. These characteristics may be used by researchers and public health workers to standardize results of experiments and to relate biological insult to a common base.

(cz) "Residual Radioactive Material" means (1) Waste (which the Secretary of Energy determines to be radioactive) in the form of tailings resulting from the processing of ores for the extraction of uranium and other valuable constituents or the ores; and (2) other waste (which the Secretary of Energy determines to be radioactive) at a processing site which relates to such processing, including any residual stock of unprocessed ores or low-grade materials. This term is used only with respect to materials at sites subject to remediation under Title I of the Uranium Mill Tailings Radiation Control Act of 1978 as amended.

(da) "Residual Radioactivity" means radioactivity in structures, materials, soils, groundwater, and other media at a site resulting from activities under the licensee's control. This includes radioactivity from all licensed and unlicensed sources used by the licensee, but excludes background radiation. It also includes radioactive materials remaining at the site as a result of routine or accidental releases of radioactive material at the site and previous burials at the site, even if those burials were made in accordance with the provisions of 10 C.F.R. Part 20 which is incorporated by reference in Chapter 3 of these rules.

(db) "Respiratory Protective Device" means an apparatus, such as a respirator, used to reduce the individual's intake of airborne radioactive materials.

(dc) "Restricted Area" means an area, access to which is limited by the licensee for the purpose of protecting individuals against undue risks from exposure to radiation and radioactive materials. Restricted area does not include areas used as residential quarters, but separate rooms in a residential building may be set apart as a restricted area.

(dd) "Roentgen (R)" means the special unit of exposure. One roentgen equals 2.58 x 10-4 coulombs per kilogram of air. *See* exposure, defined above.

(de) "Sanitary Sewerage" means a system of public sewers carrying off waste water and refuse, but excluding sewage treatment facilities, septic tanks, and leach fields owned and operated by the licensee.

(df) "Self-Contained Breathing Apparatus (SCBA)" means an atmosphere-supplying respirator for which the breathing air source is designed to be carried by user.

(dg) "Shallow Dose Equivalent (H_s)" which applies to the external exposure of the skin of

the whole body or the skin of an extremity and is taken as the dose equivalent at a tissue depth of 0.007 centimeter (7 mg/cm2).

(dh) "SI" means an abbreviation of the International System of Units.

(di) "Site Area Emergency" means events which may occur, are in progress, or have occurred that could lead to a significant release of radioactive material and that could require a response by offsite organizations to protect persons offsite.

(dj) "Site boundary" means that line beyond which the land or property is not owned, leased, or otherwise controlled by the licensee.

(dk) “Source material" means:

(i) Uranium or thorium, or any combination thereof, in any physical or chemical form, or

(ii) Ores which contain by weight one-twentieth of one percent (0.05 percent), or more of uranium, thorium, or any combination thereof. Source material does not include special nuclear material.

(dl) "Specific Activity" means the radioactivity of the radionuclide per unit mass of the nuclide. The specific activity of a material in which the radionuclide is essentially uniformly distributed is the radioactivity per unit mass of material. The Specific Activity for Natural Uranium is 6.77×10^{-7} Ci per gram of U.

(dm) "Special Nuclear Material" means:

(i) Plutonium, uranium-233, uranium enriched in the isotope 233 or in the isotope 235, and any other material that the Commission, pursuant to the provisions of section 51 of the Act, determines to be special nuclear material, but does not include source material; or

(ii) Any material artificially enriched by any of the foregoing but does not include source material.

(dn) "Stochastic Effects" means health effects that occur randomly and for which the probability of the effect occurring, rather than its severity, is assumed to be a linear function of dose without threshold. Hereditary effects and cancer incidence are examples of stochastic effects.

(do) "Supplied-Air Respirator (SAR)" means an atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.

(dp) "Survey" means an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of radioactive material or other sources of radiation. When appropriate, such an evaluation includes physical survey of the location of radioactive material and measurements or calculations of levels of radiation, or concentrations or quantities of radioactive material present.

(dq) "Test" means the process of verifying compliance with an applicable rule.

(dr) "Tight Fitting Facepiece" means a respiratory inlet covering that forms a complete seal with the face.

(ds) "Total Effective Dose Equivalent (TEDE)" means the sum of the effective dose equivalent for external exposures and the committed effective dose equivalent for internal exposures.

(dt) "Unrefined and Unprocessed Ore" means ore in its natural form prior to any processing, such as grinding, roasting, beneficiating, or refining. Processing does not include sieving or encapsulation of ore or preparation of samples for laboratory analysis.

(du) "Unrestricted Area" means an area, to which access is neither limited nor controlled by the licensee. For purposes of these rules, "uncontrolled area" is an equivalent term.

(dv) "Unrestricted Use" means that the facility area, or object may be used by individuals for any purpose without limit or control of the licensee.

(dw) "Uranium Fuel Cycle" means the operations of milling of uranium ore, chemical conversion of uranium, isotopic enrichment of uranium, fabrication of uranium fuel, generation of electricity by a light-water-cooled nuclear power plant using uranium fuel, and reprocessing of spent uranium fuel to the extent that these activities directly support the production of electrical power for the public use. Uranium fuel cycle does not include mining operations, operations at waste disposal sites, transportation of radioactive material in support of these operations, and the reuse of recovered non-uranium special nuclear and byproduct materials from the cycle.

(dx) "Uranium milling" means any activity that results in the production of byproduct material as defined in W.S. § 35-11-103. *See also* Recovery or Milling.

(dy) "User seal check (fit check)" means an action conducted by the respirator user to determine if the respirator is properly seated to the face. Examples include negative pressure check, positive pressure check, irritant smoke check, or isoamyl acetate check.

(dz) "Very High Radiation Area" means an area, accessible to individuals, in which radiation levels from radiation sources external to the body could result in an individual receiving an absorbed dose in excess of 500 rads (5 grays) in 1 hour at 1 meter from a radiation source or 1 meter from any surface that the radiation penetrates.

(ea) "Waste" means those low-level radioactive wastes containing source, special nuclear, or byproduct material that are acceptable for disposal in a land disposal facility. For the purpose of this definition, low level radioactive waste means radioactive waste not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, or byproduct material as defined in this Chapter.

(eb) "Week" means seven consecutive days starting on Sunday.

(ec) "Weighting Factor (W_T)" for an organ or tissue (T) is the proportion of the risk of

stochastic effects resulting from irradiation of that organ or tissue to the total risk of stochastic effects when the whole body is irradiated uniformly. For calculating the effective dose equivalent, the values of W_T are:

Organ or Tissue	W_T
Gonads	0.25
Breasts	0.15
Red bone marrow	0.12
Lung	0.12
Thyroid	0.03
Bone Surfaces	0.03
Remainder	[1]0.30
Whole Body	[2]1.00

[1] 0.30 results from 0.06 for each 5 "remainder organs" (excluding the skin and the lens of the eye) that receive the highest doses.

[2] For the purposes of weighting the external whole body dose (for adding it to the internal dose), a single weighting factor, $W_T = 1.0$, has been specified. The use of weighting factors for external exposure will be approved on a case-by-case basis until such time as specific guidance is issued.

(ed) "Whole Body" means, for purposes of external exposure, head, trunk including male gonads, arms above the elbow, or legs above the knees.

(ee) "Worker" means an individual engaged in work under a license issued by the Department and controlled by a licensee, but does not include the licensee.

(ef) "Working Level (WL)" means any combination of short-lived radon daughters in 1 liter of air that will result in the ultimate emission of 1.3 x 105 MeV of potential alpha particle energy. The short-lived radon daughters are: for radon-222: polonium-218, lead-214, bismuth-214, and polonium-214; and for radon 220: polonium-216, lead-212, bismuth-212, and polonium-212.

(eg) "Working Level Month (WLM)" means an exposure to one working level for 170 hours. 2,000 working hours per year divided by 12 months per year is approximately equal to 170 hours per month.

(eh) "Year" means the period of time beginning in January used to determine compliance with the provisions of these rules. The licensee may change the starting date of the year used to determine compliance by the licensee provided that the change is made at the beginning of the year and that no day is omitted or duplicated in consecutive years.

Section 6. Definitions applicable solely to criteria listed in 10 C.F.R. Part 40, Appendix A.

The following definitions apply only to criteria listed in 10 C.F.R. Part 40, Appendix A which outline the operation of Uranium Mills and disposition of tailings or wastes produced by the extraction or concentration of source material from ores processed primarily for their source

material content.

(a) "Aquifer" means a geological formation, group of formations, or part of a formation capable of yielding a significant amount of groundwater to wells or springs. Any saturated zone created by uranium or thorium recovery operations would not be considered an aquifer unless the zone is potentially (1) hydraulically interconnected to a natural aquifer, (2) capable of discharge to surface water, or (3) reasonably accessible because of migration beyond the vertical projection of the boundary of the land transferred for long-term government ownership and care in accordance with 10 C.F.R. Part 40, Appendix A Criterion 11.

(b) "As expeditiously as practicable considering technological feasibility" for the purpose of 10 C.F.R. Part 40, Appendix A, Criterion 6A, means as quickly as possible considering: the physical characteristics of the tailings and the site; the limits of available technology, the need for consistency with the mandatory requirements of other regulatory programs, and factors beyond the control of the licensee. The phrase permits consideration of cost of compliance only to the extent specifically provided for by use of the term “available technology”.

(c) "Available Technology" means technologies and methods for emplacing a final radon barrier on uranium mill tailings piles or impoundments. This term shall not be construed to include extraordinary measures or techniques that would impose costs that are grossly excessive as measured by practice within the industry (or one that is reasonably analogous), (such as, by way of illustration only, unreasonable over time, staffing, or transportation requirements, etc., considering normal practice in the industry; laser fusion of soil, etc.), provided there is reasonable progress toward emplacement of the final radon barrier. To determine grossly excessive costs, the relevant baseline against which costs shall be compared is the cost estimate for tailings impoundment closure contained in the licensee's approved reclamation plan, but costs beyond these estimates shall not automatically be considered grossly excessive.

(d) "Closure" means the activities following operations to decontaminate and decommission the buildings and site used to produce byproduct materials and reclaim the tailings and/or waste disposal area.

(e) "Closure Plan" means the Commission approved plan to accomplish closure.

(f) "Compliance Period" begins when the Commission sets secondary ground-water protection standards and ends when the owner or operator's license is terminated and the site is transferred to the State or Federal agency for long-term care.

(g) "Dike" means an embankment or ridge of either natural or man-made materials used to prevent the movement of liquids, sludges, solids, or other materials.

(h) "Disposal Area" means the area containing byproduct material to which the requirements of 10 C.F.R. Part 40, Appendix A, Criterion 6 apply.

(i) "Existing Portion" means the land surface area of an existing surface impoundment on which significant quantities of uranium or thorium byproduct materials had been placed prior to September 30, 1983.

(j) "Factors Beyond the Control of the Licensee" means factors proximately causing delay in meeting the schedule in the applicable reclamation plan for the timely emplacement of the final radon barrier notwithstanding the good faith efforts of the licensee to complete the barrier in compliance with paragraph (1) of 10 C.F.R. Part 40, Appendix A, Criterion 6A. These factors may include but are not limited to:

(i) Physical conditions at the site;

(ii) Inclement weather or climate conditions;

(iii) An act of God;

(iv) An act of war;

(v) A judicial or administrative order or decision, or change to the statutory, regulatory, or other legal requirements applicable to the licensee's facility that would preclude or delay the performance of activities required for compliance;

(vi) Labor disturbances;

(vii) Any modifications, cessation or delay ordered by State, Federal, or local agencies;

(viii) Delays beyond the time reasonably required in obtaining necessary government permits, licenses, approvals, or consent for activities described in the reclamation plan proposed by the licensee that result from agency failure to take final action after the licensee has made a good faith, timely effort to submit legally sufficient applications, responses to request (including relevant data requested by the agencies), or other information, including approval of the reclamation plan; and

(ix) An act or omission of any third party over whom the licensee has no control.

(k) "Final Radon Barrier" means the earthen cover (or approved alternative cover) over tailings or waste constructed to comply with 10 C.F.R. Part 40, Appendix A, Criterion 6 of this appendix (excluding erosion protection features).

(l) "Groundwater" means water below the land surface in a zone of saturation. For purposes of 10 C.F.R. Part 40, Appendix A, groundwater is the water contained within an aquifer as defined above.

(m) "Leachate" means any liquid, including any suspended or dissolved components in the liquid that has percolated through or drained from the byproduct material.

(n) "Licensed Site" means the area contained within the boundary of a location under the control of persons generating or storing byproduct materials under a Commission or an agreement state license.

(o) "Liner" means a continuous layer of natural or man-made materials, beneath or on

the sides of a surface impoundment which restricts the downward or lateral escape of byproduct material, hazardous constituents, or leachate.

(p) "Milestone" means an action or event that is required to occur by an enforceable date.

(q) "Operations" this definition is specific for uranium or thorium tailings and means that a uranium or thorium mill tailings pile or impoundment is being used for the continued placement of byproduct material or is in standby status for such placement. A pile or impoundment is in operation from the day that byproduct material is first placed in the pile or impoundment until the day final closure begins.

(r) "Point of Compliance" is the site specific location in the uppermost aquifer where the groundwater protection standard must be met.

(s) "Reclamation Plan" for the purposes of 10 C.F.R. Part 40, Appendix A Criterion 6A means the plan detailing activities to accomplish reclamation of the tailings or waste disposal area in accordance with the technical criteria in this appendix. The reclamation plan must include a schedule from reclamation milestones that are key to the completion of the final radon barrier including as appropriate, but not limited to, windblown tailings retrieval and placement on the pile, interim stabilization (including dewatering or the removal of freestanding liquids and recontouring), and final radon barrier construction (reclamation of tailings must also be addressed in the closure plan; the detailed reclamation plan may be incorporated into the closure plan).

(t) "Surface Impoundment" means a natural topographic depression, man-made excavation, or diked area, which is designed to hold an accumulation of liquid wastes or wastes containing free liquids, and which is not an injection well.

(u) "Uppermost Aquifer" means the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary.

Section 7. Units of Exposure and Dose.

(a) As used in these rules, the unit of exposure is the coulomb per kilogram (C per kg). One roentgen is equal to 2.58×10^{-4} coulomb per kilogram of air.

(b) As used in these rules, the units of dose are:

(i) Gray (Gy) is the SI unit of absorbed dose. One gray is equal to an absorbed dose of one joule per kilogram. One gray equals 100 rad.

(ii) Rad is the special unit of absorbed dose. One rad is equal to an absorbed dose of 100 erg per gram or 0.01 joule per kilogram. One rad equals 0.01 Gy.

(iii) Rem is the special unit of any of the quantities expressed as dose equivalent. The dose equivalent in rem is equal to the absorbed dose in rad multiplied by the quality factor. One rem equals 0.01 Sv.

(iv) Sievert (Sv) is the SI unit of any of the quantities expressed as dose equivalent. The dose equivalent in sievert is equal to the absorbed dose in gray multiplied by the quality factor. One Sv equals 100 rem.

(c) As used in these rules, the quality factors for converting absorbed dose to dose equivalent are shown in Table 1.

TABLE 1

Quality Factors and Absorbed Dose Equivalencies

Type of Radiation	Quality Factor (Q)	Absorbed Dose Equal to a Unit Dose Equivalent
X, gamma, or beta radiation and high-speed electrons	1	1
Alpha particles, multiple-charged particles, fission fragments and heavy particles of unknown charge	20	0.05
Neutrons of unknown energy	10	0.1
High energy protons	10	0.1

For the column in Table 1 labeled "Absorbed Dose Equal to a Unit Dose Equivalent," the absorbed dose in rad is equal to one rem or the absorbed dose in gray is equal to one Sv.

Section 8. Units of Radioactivity.

For purposes of these rules, activity is expressed in the SI unit of becquerel (Bq), or in the special unit of curie (Ci), or their multiples, or disintegrations or transformations per unit of time.

Section 9. Communication and Referenced Materials.

All communication and reports concerning parts of these rules, and application filled thereunder, should be addressed to the Department.

Section 10. Deliberate misconduct.

(a) No person may do any of the following:

(i) Engage in deliberate misconduct that causes or would have caused, if not detected, a licensee under this chapter to be in violation of any rule or order of the Department; or any term, condition or limitation of any license issued by the Department under this chapter; or

(ii) Deliberately submit to the Department any information that the person knows to be incomplete or inaccurate. This includes licensees, and contractors and subcontractors to licensees.

(iii) Deliberate misconduct by a person means an intentional act or omission that the person knows:

(A) Would cause a licensee to be in violation of any rule, regulation, or order; or any term, condition, or limitation issued by the Department; or

(B) Constitutes a violation of a requirement, procedure, instruction, contract, purchase order, or policy of a licensee or a contractor or subcontractor of a licensee.

Section 11. **Exemptions.**

(a) The Department may upon application or upon its own initiative, grant such exemptions or exception from requirements as it determines are authorized by law and will not result in undue hazard to public health and safety or property. Provisions for exceptions are provided for in W.S. § 35-11-2003(c).

(b) Additionally, the Department authorizes exemptions for the possession, use, transfer, or acquisition of any byproduct material, or source material extracted or concentrated at a uranium or thorium milling facility to any U.S. Department of Energy contractor or subcontractor and any U.S Nuclear Regulatory Commission contractor or subcontractor of the following categories operating within this State:

(i) Prime contractors performing work for the U.S. Department of Energy at U.S. Government owned or controlled sites, including the transportation of sources of radiation to or from such sites and the performance of contract services during temporary interruptions of such transportation;

(ii) Prime contractors of the U.S. Department of Energy performing research in, or development, manufacture, storage, testing, or transportation of, atomic weapons or components thereof;

(iii) Prime contractors of the U.S. Department of Energy using or operating nuclear reactors or other nuclear devices in the U.S. Government owned vehicles or vessels; and

(iv) Any other prime contractor or subcontractor of the U.S. Department of Energy of the U.S. Nuclear Regulatory Commission when the State and the U.S. Nuclear Regulatory Commission determine that:

(A) The exemption of the prime contractor or subcontractor is authorized by law; and

(B) Under the terms of the contract or subcontract, there is adequate assurance that the work thereunder can be accomplished without undue risk to the public health and safety.

Section 12. Records.

(a) A licensee shall maintain records showing the receipt, transfer, and disposal of all licensed material.

(b) All records required by this chapter shall be accurate and factual.

(c) Additional records requirements are specified elsewhere in these rules. If the record retention period is not specified, the record shall be maintained for a period of three years.

CHAPTER 2

INSPECTIONS, ENFORCEMENT, AND PENALTIES

Section 1. Purpose.

(a) This Chapter establishes requirements to ensure the protection of the public health and safety and of all persons at, or in the vicinity of, the place of use, storage, or disposal of source material involved in the extraction or concentration of uranium or thorium in source material and ores at milling facilities and the management and disposal of the associated byproduct material.

Section 2. Scope.

(a) This chapter applies to the authorized and unauthorized extraction or concentration of uranium or thorium in source material and ores at milling facilities. The Department may inspect, enforce, and penalize both licensees and non-licensees for the unlawful possession, use, transfer, ownership or other such unpermitted handling of byproduct material and source material involved in the extraction or concentration of uranium or thorium at uranium and thorium facilities in accordance with these rules, the Act, and applicable state and federal laws.

Section 3. Inspections and Testing.

(a) Each licensee and applicant shall obtain, afford, and grant access to the Department, at all reasonable times, the opportunity to inspect licensed material, facilities, premises, and records to ensure compliance with these rules, the Act, licensing conditions, and other applicable state and federal laws.

(b) As required by the Department, each licensee shall perform, or shall permit the Department to perform, such reasonable tests as the Department deems appropriate or necessary including, but not limited to, the testing of:

(i) Source material from the extraction or concentration of uranium or thorium at uranium or thorium milling facilities, and byproduct material;

(ii) Facilities wherein licensed material are used or stored; and

(iii) Radiation detection and monitoring instruments.

Section 4. Violations.

(a) All violations of this Act or these rules are subject to penalty as provided by Wyoming Statute (W.S.) § 35-11-901.

(b) An injunction or other court order may be obtained prohibiting any violation of any provision of the Act or these rules.

(c) Submittal of false information shall be sufficient basis for rejecting or revoking any Department issued license, registration, certification or other acceptance, approval or permit.

(d) These rules and regulations shall not limit any existing civil or criminal remedies in accordance with W.S §. 35-11-904.

Section 5. Enforcement.

(a) The Department may issue Notices of Violation and Orders pursuant to W.S. § 35-11-701.

(b) Licensee initiative for self-identification and correction of problems is encouraged. The Department will generally not issue Notices of Violation~~s~~ for a violation that:

(i) Was identified by the licensee;

(ii) Results in low or no health and safety consequences;

(iii) Was documented, in writing, for review by the Department;

(iv) Was or will be corrected, including measures to prevent recurrence, within ninety (90) days, or another time frame approved by the Department; and

(v) Was not a violation that could reasonably be expected to have been prevented by the licensee's corrective action for a previous violation.

(c) Licensees are not ordinarily cited for violations resulting from matters outside of their control, such as equipment failures that were not avoidable by reasonable quality assurance measures. However, licensees are held responsible for acts of their employees. Accordingly, the rules should not be construed to excuse personal errors.

(d) At the discretion of the Department, and in accordance with W.S. § 35-11-701, licensees may have the opportunity to eliminate or correct the violation before the issuance of a Notice of Violation if that violation results in low or no health and safety consequences and can be eliminated or corrected in an expedient manner.

Section 6. Orders and other Administrative Actions.

(a) The Department may issue Orders:

(i) To remove a threat to public health and safety or the environment;

(ii) To demand that a Licensee or other person cease and desist violations or unauthorized or illegal activities; or

(iii) For any other reason in which license revocation or suspension is authorized.

(b) The Department may issue Orders to suspend all or part of any regulated activity. These Orders may be effective immediately, without prior opportunity for hearing, whenever it is determined that public health, interest, or safety so requires, or when responding to a willful or wanton violation.

(c) The Department may hold informal enforcement or settlement conferences to discuss safety, public health, or environmental problems, compliance with regulatory requirements, proposed corrective measures, including schedules for implementation, and enforcement.

CHAPTER 3

RADIATION PROTECTION STANDARDS

Section 1. Purpose.

(a) This Chapter establishes standards for protection against ionizing radiation resulting from activities conducted pursuant to licenses issued by the Department.

(b) This Chapter is designed to control the receipt, possession, use, transfer, or disposal of licensed material such that the total dose to an individual, excluding radiation dose from background sources, does not exceed the standards for protection against radiation as outlined in this Chapter.

(c) The limits provided for in this Chapter do not apply to doses due to background, from medical diagnosis or therapy, from individuals administered radioactive material and released, or from voluntary participation in medical research.

Section 2. Scope.

(a) This Chapter applies to persons licensed by the Department to acquire, own, possess, use, transfer, offer or receive for transport, or dispose of licensed material.

Section 3. Implementation.

(a) Any existing license condition imposed by the Department that is more restrictive than this Chapter remains in force until there is an amendment or renewal of the license.

Section 4. Incorporation by Reference of 10 Code of Federal Regulations (C.F.R.) Part 20; Standards for Protection Against Radiation.

(a) Any reference in these rules to requirements, or procedures contained in 10 C.F.R., Part 20, Sections 20.1001 through 20.2402 shall constitute the full adoption by reference of that part and subparts as they appear in 10 C.F.R., revised as of January 1, 2017, including any notes and appendices therein, unless expressly provided otherwise in these rules. These rules do not include any later amendments or editions of the incorporated matter.

(b) The following 10 C.F.R. sections, as of January 1, 2017, are excluded from these rules and are not incorporated by reference: 20.1001, 20.1002, 20.1003, 20.1004(a), 20.1005, 20.1006, 20.1007, 20.1008, 20.1009, 20.1206, 20.1301(c), 20.1401, 20.1402, 20.1403, 20.1404, 20.1405, 20.1406(b), 20.1601(f), 20.1903(b), 20.1903(d), 20.1905(g), 20.2003(b), 20.2104 (b), 20.2105, 20.2203(c), 20.2204, 20.2206(a)(1), 20.2206(a)(3), 20.2206(a)(4), 20.2206(a)(5), 20.2401, 20.2402, and Appendix D.

(c) Any references in the federal rules adopted by reference to "NRC Operations Center (301-816-5100)," or any component thereof, in 10 CFR Part 20 shall be deemed to be a reference to the Department and the Uranium Recovery Program.

(d) Any references in the federal rules adopted by reference to the United States Nuclear Regulatory Commission (NRC), or any component thereof, shall be deemed to be a reference to the Department and the Uranium Recovery Program.

CHAPTER 4

LICENSING REQUIREMENTS FOR SOURCE AND BYPRODUCT MATERIAL

Section 1. Purpose.

(a) This Chapter establishes the criteria for issuance and terms of conditions upon which the Department may issue licenses to receive title to, acquire, own, possess, use, transfer, offer or receive for transport, or deliver any licensed material. This Chapter also governs the operation of facilities for-handling and disposing of licensed material. This Chapter also provides requirements for decommissioning and the long-term care and maintenance of byproduct material. Unless otherwise specified, the requirements of this Chapter are in addition to, and not in substitution for, other applicable requirements of these rules.

Section 2. Scope.

(a) This Chapter establishes performance objectives and procedural requirements applicable to any licensee. This Chapter also applies to waste systems for byproduct material, including specific technical and financial requirements for siting, construction, operation, monitoring, decontamination, reclamation, and ultimate stabilization of byproduct material, as well as requirements for licensee transfer and termination, long-term site monitoring, surveillance, ownership, and ultimate custody of source material milling facilities and byproduct material impoundments.

(b) A person subject to the regulations of this Chapter may not receive title to, acquire, own, possess, use, transfer, offer or receive for transport, provide for long-term care and maintenance, or deliver or dispose of licensed material, or residual radioactive material as defined in Chapter 1, General Provisions after removal from its place of deposit in nature, unless authorized in a general or specific license issued by the Department pursuant to this Chapter.

(c) In instances where this Chapter conflicts with Chapter 11 of the Non-Coal Rules and Regulations, this Chapter shall govern.

Section 3. Incorporation by Reference.

(a) Any reference in these rules to requirements, or procedures contained in 10 Code of Federal Regulations (C.F.R.) Part 40, Sections 40.2(a), 40.36(f), 40.51, 40.54, 40.55, 40.61, and Appendix A shall constitute the full adoption by reference of that part and subparts as they appear in 10 C.F.R. 40, Appendix A, revised as of January 1, 2017, unless expressly provided otherwise in these rules. These rules do not include any later amendments or editions of incorporated matter.

(b) The following 10 C.F.R. portions, including all subparts, as of January 1, 2017 are

excluded from these rules and are not incorporated by reference: 40.51(b)(6) and the following portions of 10 C.F.R. Part 40, Appendix A: Introduction definitions; Section III Site and Byproduct Material Ownership, Criterion 9(h)(4), Criterion 11; and Section IV Long-Term Site Surveillance, Criterion 12.

(c) Any reference in these rules to requirements, or procedures contained in 10 C.F.R. §§ 150.20 and 150.31 shall constitute the full adoption by reference of that part and subparts as they appear in 10 C.F.R. §§ 150.20 and 150.31, revised as of January 1,2017, unless expressly provided otherwise in these rules. These rules do not include any later amendments or editions of incorporated matter.

(d) The following sections, as of January 1, 2017 are excluded from these rules and are not incorporated by reference: 10 C.F.R. § 150.15, 150.15(a), and 150.31(b)(3)(iv). The NRC shall retain the rights reserved to the NRC in 10 C.F.R. §§ 150.15 and 150.15(a).

Section 4. Deliberate Misconduct.

(a) Any licensee, applicant for a license, employee of a licensee or applicant, or any contractor (including a supplier or consultant), subcontractor, employee of a contractor or subcontractor of any licensee or applicant for a license, who knowingly provides to any licensee, applicant, contractor, or subcontractor, any component, equipment, materials, or other goods or services that relate to a licensee's or applicant’s activities in part, may not:

(i) Engage in deliberate misconduct that causes or would have caused, if not detected, a licensee or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation of any license issued by the Department.

(ii) Deliberately submit to the NRC or Department information known to be materially incomplete or inaccurate.

(b) The Department may bring an enforcement action against any person who violates subparagraphs (a)(i) or (a)(ii) of this section.

(c) Deliberate misconduct means an intentional act or omission that the person knows:

(i) Would cause a licensee or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation, of any license issued by the Department; or

(ii) Constitutes a violation of a requirement, procedure, instruction, contract, purchase order, or policy of a licensee or applicant as mandated by the Department.

Section 5. Filing an Application for a Specific License.

(a) Two copies of the application for a specific license shall be mailed, or sent electronically as approved by the Administrator, to the Department accompanied with the license application fee, pursuant to Chapter 13 of these rules to:

(b) The application for a specific license, and copies thereof, may be submitted in conjunction with an application for a mining permit as described in Wyoming Statute (W.S.) §§ 35-11-406 and -428 (2015). An application for a specific license, and copies thereof, shall be presented in a clean and orderly manner, as determined appropriate by the Department. Hard copies of specific license applications shall be bound, with the use of a three ring binder or something comparable, such that the information is easily accessible and pages are not misplaced.

(c) A permit to mine, when applicable, shall be obtained prior to the license being issued. Failure to obtain a permit to mine shall be grounds for refusing to issue a license. As determined by the Department, activities such as toll milling shall not require a permit to mine.

(d) Information provided by an applicant or licensee to the Department shall be complete and accurate in all material respects.

(e) Each applicant or licensee shall notify the Department of information identified by the applicant or licensee as having, for the regulated activity, a significant implication for public health and safety. An applicant or licensee violates this paragraph only if the applicant or licensee fails to notify the Department of information that the applicant or licensee has identified as having a significant implication for public health and safety. This requirement is not applicable to information which is already required to be provided to the Department by other reporting requirements.

Section 6. Exemptions from Regulatory Requirements.

(a) Any person is exempt from this Chapter to the extent that such person receives title to, acquires, owns, possesses, uses, or transfers source material in any chemical mixture, compound, solution, or alloy in which the source material is by weight less than one-twentieth of one percent (0.05 percent) of the mixture, compound, solution, or alloy. The exemption contained in this paragraph does not apply to Australian-obligated source material, nor does it include byproduct materials as defined in these rules.

(b) Any person is exempt from this Chapter to the extent that such person receives, possesses, uses, or transfers unrefined and unprocessed ore containing source material provided that, except as authorized in specific license, such person shall not refine or process such ores.

(c) No person may introduce source or byproduct material into a product or material either knowing or having reason to believe that it will be transferred to persons exempt under this

Chapter.

(d) The Department may, upon its own initiative or the application of an interested person, grant such exemptions from the requirements of this Chapter as authorized by law and, as determined by the Department, will not endanger life, property, and is otherwise in the public interest.

(e) Common and contract carriers, freight forwarders, warehousemen, and the United States Postal Service are exempt from the requirements of this Chapter and the requirements set forth in Section 81 of the Atomic Energy Act of 1954, 42 U.S.C. §§ 2011 *et seq*., as amended to the extent that they transport or store byproduct material in the regular course of carriage for another or storage incident thereto.

(f) Except to the extent that the Department of Energy's (DOE) facilities or activities, subject to licensing pursuant to Section 202 of the Energy Reorganization Act of 1974 (42 U.S.C. § 5842.), are involved, any prime contractor of the DOE is exempt from the requirements for a license set forth in 81 and 82 of the Act (42 U.S.C. § 2111 and 42 U.S.C. § 2112) and from this Chapter to the extent that such contractor, under his prime contract with the DOE manufactures, produces, transfers, receives, acquires, owns, possesses, or uses byproduct material for:

(i) The performance of work for the DOE at a United States Government owned or controlled site, including the transportation of byproduct material to or from such site and the performance of contract services during temporary interruptions of such transportation;

(ii) Research in, or development, manufacture, storage, testing, or transportation of, atomic weapons or components thereof; or

(iii) The use or operation of nuclear reactors or other nuclear devices in a United States Government owned vehicle or vessel.

(g) This Chapter shall not be deemed to authorize the import of radioactive material or products containing radioactive material.

Section 7. Pre-Licensing Construction.

(a) Except as provided in this Chapter, the applicant shall not commence construction at any plant or facility in which the licensed activity will occur until the Department has issued a license. Commencement of construction, defined in Chapter 1 of these rules, prior to issuance of the license may be grounds for denial of a license.

(b) At a minimum, an application for a specific license to receive title to, acquire, own, possess, use, transfer, offer or receive for transport and use licensed material shall be filed with the Department at least nine (9) months prior to the commencement of construction of any plant or facility in which the licensed activity will occur, and in accordance with existing applicable law, including Chapter 3 of the Non-Coal Rules and Regulations.

Section 8. General Requirements for Issuance of Specific Licenses

(a) An application for a specific license may be approved if the Department determines that:

(i) The applicant is qualified by reason of training and experience, to use licensed material for the purpose requested in the subject application consistent with the governing statutes and rules and in such a manner as to minimize danger to public health and safety, or property;

(ii) The applicant's proposed equipment, facilities, and procedures are adequate to minimize danger to public health and safety or property;

(iii) The applicant satisfies the requirements listed in this Chapter;

(iv) The issuance of the license will not be detrimental to the health and safety of the public;

(v) The applicant is financially qualified to conduct the licensed activity, including any required decontamination, decommissioning, reclamation, or disposal; and

(vi) The applicant has satisfied the requirements of Chapter 6 of these rules.

(b) The Department may at any time after the filing of the original application, and before the expiration of the license, require further statements in order to enable the Department to determine whether the application should be granted or denied or whether a license should be modified or revoked. All applications and statements shall be signed by the applicant or a person duly authorized to act for and on his behalf.

(c) Upon determination that an application meets the requirements of the Act, applicable rules, and public health and safety considerations, the Department may issue a specific license authorizing the proposed activity in such form, and containing such conditions and limitations, as the Department deems appropriate or necessary.

(d) The Department may incorporate conditions or provisions in any license at the time of issuance, with respect to the licensee's receipt, possession, use, and transfer of licensed material subject to this Chapter as it deems appropriate or necessary in order to:

(i) Minimize danger to public health and safety, and the environment;

(ii) Require reports and recordkeeping, and to provide for such inspections of activities under the license as may be appropriate and necessary; and

(iii) Prevent loss or theft of licensed material subject to this Chapter.

(e) All licenses, whether issued by the NRC or the Department, and the authorization to possess or utilize licensed material cannot be transferred, assigned, or in any manner disposed of, either voluntarily or involuntarily, directly or indirectly, through transfer of any license to any

person unless the Department, after securing full information, determines the transfer is in accordance with the Act and these rules. Upon the transfer of an existing license, the new licensee shall comply with existing laws and license conditions. The Department may impose new license conditions to be complied with by the new licensee as it deems necessary.

(f) Each licensee pursuant to this Chapter shall confine use and possession of licensed material to the locations and purposes authorized in the license.

(g) Each licensee shall notify the Department in writing when the licensee decides to permanently discontinue all activities involving materials authorized under the license.

(h) Each licensee shall notify the Department in writing within seven (7) business days following the filing of voluntary or involuntary petition for bankruptcy under any Chapter of the United States Code (U.S.C.) by or against:

(i) The licensee;

(ii) An entity controlling the licensee, or listing the license or licensee as property of the estate as that term is defined in 11 U.S.C. § 101(14); or

(iii) An affiliate of the licensee as that term is defined in 11 U.S.C. § 101(2).

(i) The written notification of bankruptcy submitted to the Department shall identify the bankruptcy court in which the petition for bankruptcy was filed, the case number, and the date of filing.

(j) The licensee shall allow the Department, to enter and inspect any licensed area as provided by W.S. §§ 35-11-109(a)(iv), (v) and (vi). The licensee shall obtain for the Department the right to access and cross over private lands leading to or within a licensed area for inspection of regulated activities consistent with state law and these rules. The right to access and cross over private property shall be in writing, notarized, included in the application, and contain the following:

(i) The name of the landowner of the property to be accessed or crossed;

(ii) A legal description of the lands, using Public Land Survey System nomenclature that will be crossed during the inspection process;

(iii) A declarative statement from the landowner providing the Department permission to access the described private property for the inspection of regulated activities; and

(iv) The landowner's signature.

(v) In lieu of the foregoing, the licensee may provide the Department with an executed Department, Land Quality Division, Form 8 or a copy of the Surface Use Agreement clearly providing the Department the authority to access or cross over the subject private property.

Section 9. Specific Requirements for Issuance of Specific Licenses

(a) A specific license for source material involved in the extraction and concentration of uranium or thorium at uranium or thorium facilities and for the management and disposal of byproduct material will be issued if the applicant submits to the Department a complete and accurate application that clearly demonstrates how the requirements and objectives of this Chapter are met.

(b) An application for a license, including applications for the amendment or renewal of an existing license, to receive, possess and use licensed material shall contain all information required under these rules and such material as the Department may deem necessary. The application shall, at a minimum, contain the following information:

(i) A description of the proposed project or action;

(ii) For new licenses, environmental data that includes the results of a one-year preoperational monitoring program;

(iii) For renewal of licenses, environmental data containing results of the operational monitoring program or monitoring required to be conducted if the facility was not in operation but in standby mode;

(iv) Site characteristics, including regional and site specific geology, topography, hydrology, and meteorology;

(v) Radiological and non-radiological impacts of the proposed project or action including waterway and groundwater impacts;

(vi) An assessment of the radiological and non-radiological impacts to the public health and the environment;

(vii) Consideration of the long-term impacts of the licensed activities;

(viii) A representative presentation of the physical, chemical, and radiological properties of the type of licensed material to be received, stored, processed, or disposed of;

(ix) An evaluation of the short-term and long-term environmental impacts of such receipt, storage, processing, or disposal;

(x) An analysis of the environmental, economic, social, technical, and other benefits of the proposed activities against environmental costs and social effects;

(xi) Environmental effects of accidents;

(xii) Byproduct material disposal, decommissioning, decontamination, reclamation, and impacts of these activities;

(xiii) A closure plan to be included in the reclamation plan for decontamination,

decommissioning, restoration, and reclamation of buildings of the licensed area to levels that would allow where applicable unrestricted use and for reclamation of the byproduct material disposal areas in accordance with technical requirements of 10 C.F.R. Part 40, Appendix A;

(xiv) Proposal of an acceptable form and amount of financial assurance in accordance with 10 C.F.R. Part 40, Criterion 9 of Appendix A; and the Department's rules;

(xv) Specifications for the emissions control and disposition of byproduct material; and

(xvi) Emergency response protocol.

(c) For applications for a new license or application for a license amendment to expand the licensed site, proof of mailed notification to the owner or owners of the property on which licensed material is recovered, stored, processed, or disposed of must be demonstrated to the Department. The applicant for a new license must demonstrate that the owner or owners of the property were sent by certified United States mail, notification from the applicant stating that:

(i) Licensed radioactive material will be recovered, stored, processed, or disposed on the property; and

(ii) Decommissioning by the Department, funded by a surety, or as directed by order may be required and performed on the licensed site even if the licensee is unable or fails to decommission the licensed site as required by license.

(d) Environmental concerns outlined in subsection (b) of this section need to be resolved when the Department:

(i) Receives application for a new specific license or renewal of a specific license;

(ii) Receives an amendment request that would authorize or result in:

(A) A significant expansion of a site;

(B) A significant change in the type of releases;

(C) A significant increase in the amounts of releases;

(D) A significant increase in individual or cumulative occupational radiation exposure; or

(E) A significant increase in the potential for or consequences from radiological accidents.

(e) The Department may exempt an applicant or licensee from the requirement to submit additional environmental impact information on the determination that environmental concerns are addressed through information previously provided to the Department.

(i) In considering exemptions, the Department may request additional information to ensure that no significant environmental impacts will result from the proposed or licensed activity.

(f) The applicant shall provide written specification describing the means employed so that all airborne effluent releases are reduced to levels as low as is reasonably achievable (ALARA) during the operational phase of any project.

(g) During any one full year prior to submittal of a new application or an amendment to expand the licensed area or operations, the applicant or licensee shall conduct a preoperational monitoring program to provide complete baseline data on an in-situ recovery or a conventional milling site describing its pre-operational environment condition.

(h) Throughout the construction and operating phases of the in-situ recovery facility or conventional mill, the applicant or licensee shall conduct an operational monitoring program to measure or evaluate compliance with applicable standards and regulations, in order to evaluate performance of control systems and procedures, environmental impacts of operation, and to detect potential long-term effects.

(i) Upon receipt of the license application or any amendments thereto, and of any other documents required, the Department may transmit information for review and comment to federal, state, and local agencies having expertise in or jurisdiction over the proposed project or activity. Written comments and reports of reviewing agencies may be considered by the Department in its decision-making review process on the license application or amendment.

(i) If an Environmental Impact Statement (EIS) or Environmental Assessment (EA) is required by a federal agency pursuant to the National Environmental Policy Act of 1969 (NEPA) and is provided by such federal agency, it may be used in the Department's decision-making review process.

(j) An application for a license shall contain proposed specifications relating to the recovery or milling operations and management and disposition of tailings or wastes resulting from such recovery or milling activities to achieve the requirements and objectives set forth in the criteria listed in 10 C.F.R. Part 40, Appendix A. Each applicant for a new license or for license renewal must clearly demonstrate how the requirements and objectives set forth in 10 C.F.R. Part 40, Appendix A have been addressed. Failure to clearly demonstrate how the requirements and objectives in 10 C.F.R. Part 40, Appendix A have been addressed shall be grounds for refusing to approve an application.

Section 10. Operational Requirements.

Each licensee shall:

(a) Operate in accordance with the requirements and objectives of 10 C.F.R. Part 40, Appendix A, and this Chapter, including the procedures required by Section 9(f) and the monitoring required by Section 9(g).

(b) Submit a semi-annual report to the Department within sixty (60) days following

January 1 and July 1 of each year. The report must specify the quantity of each of the principal radionuclides released to unrestricted areas in liquid and in gaseous effluents during the previous six months of operation, and such other information as the Department may require to estimate the maximum potential annual radiation doses to the public resulting from effluent releases. If quantities of radioactive materials released during the reporting period are significantly above the licensee's design objectives previously reviewed as part of the most recent licensing action, the report shall cover this specifically. On the basis of such reports or any additional information the Department may obtain from the licensee or others, the Department may require the licensee to take such actions as the Department deems appropriate to protect public health and safety and the environment.

(c) Licensee shall report events that have significant radiological effects on employee safety, public health, or the environment to the Department according to the following:

(i) All licensees shall notify the Department as soon as possible but no later than four (4) hours after the discovery of an event that prevents immediate protective actions necessary to avoid exposure to radiation or licensed materials that could exceed regulatory limits (events may include fires, explosions, toxic gas releases, etc.). The following events require immediate notification to the Department:

(A) Any failure in a tailings or waste retention system which results in a release of tailings or waste into unrestricted areas; and

(B) Any unusual conditions which are not contemplated in the design of the retention system and which if not corrected could lead to failure of the system and result in a release of tailings or waste into unrestricted areas.

(ii) Each licensee shall notify the Department within twenty-four (24) hours after the discovery of any of the following events involving licensed material:

(A) An unplanned contamination event that:

(I) Requires access to the contaminated area, by workers or the public, to be restricted for more than twenty-four (24) hours by imposing additional radiological controls or by prohibiting entry into the area;

(II) Involves a quantity of material greater than five times the lowest annual limit on intake specified in 10 C.F.R. Part 20, Appendix B; and

(III) Requires access to the area restricted for a radiological safety reason other than to allow isotopes with a half-life of less than twenty-four (24) hours to decay prior to decontamination.

(B) An event in which equipment is disabled or fails to function as designed when:

(I) The equipment is required by regulation or license condition to prevent releases exceeding regulatory limits, to prevent exposures to radiation and

radioactive materials exceeding regulatory limits, or to mitigate the consequences of an accident;

(II) The equipment is required to be available and operable when it is disabled or fails to function; and

(III) No redundant equipment is available and operable to perform required safety function.

(C) An event that requires unplanned medical treatment at a medical facility of an individual with spreadable radioactive contamination on the individual's clothing or body;

(D) An unplanned fire or explosion damaging any licensed material or any device, container, or equipment containing licensed material when:

(I) The quantity of material involved is greater than five times the lowest annual limit on intake specified in 10 C.F.R. Part 20, Appendix B.

(II) The damage affects the integrity of the licensed material or its container.

(iii) Reporting of spills of licensed material and excursions shall be done pursuant to Chapter 11 of the Non-Coal Rules and Regulations.

(iv) Reports made by the licensees in response to the requirements of this section must be made as follows:

(A) Licensees shall make reports required by Sections 10(c)(i) and 10(c)(ii) of this Chapter by telephone to the Department. To the extent that the information is available at the time of notification, the information provided in these reports must include:

(I) The caller's name and call back telephone number;

(II) A description of the event, including date and time;

(III) The exact location of the event;

(IV) The isotopes, quantities, and chemical and physical form of the licensed material involved; and

(V) Any personnel radiation exposure data available.

(B) Licensees who make a report required by Section 10(c)(iii) of this Chapter shall submit a written follow-up report as prescribed in Chapter 11 of the Non-Coal Rules and Regulations.

(C) Written reports prepared pursuant to other applicable rules may be submitted to fulfill this requirement if the reports contain all of the necessary information and the appropriate distribution is made. The reports must include the following:

(I) A description of the event, including the probable cause and the manufacturer and model number (if applicable) of any equipment that failed or malfunctioned;

(II) The exact location of the event;

(III) A description of the isotopes, quantities, and chemical and physical form of the licensed material involved;

(IV) Date and time of the event;

(V) Corrective actions taken or planned and the result of any evaluations or assessments;

(VI) Timely schedule for remediation of the spill or release, if required; and

(VII) The extent of exposure of individuals to radiation or to radioactive materials without identification of the individuals by name.

Section 11 Expiration and Termination of Licenses.

(a) The term of the specific license is for a fixed term not to exceed ten (10) years.

(b) Expiration of the specific license does not relieve the licensee of the requirements of the Act, these rules, or existing license conditions.

(c) All license provisions continue in effect beyond the expiration date with respect to possession of licensed material until the Department notifies the former licensee in writing that the provisions of the license are no longer binding. During this time, the former licensee must:

(i) Limit actions involving radioactive material to strictly decommissioning related activities; and

(ii) Continue to control entry to restricted areas until the location(s) is suitable for release for unrestricted use or for release for long-term care and maintenance.

(d) A licensee shall notify the Department, in writing to request the termination of the license within seven (7) days from when the licensee decides to terminate all licensed activities. This notification and request for termination of the license shall include the reports on decommissioning and reclamation activities as required by this Chapter.

(e) No less than thirty (30) days before the expiration date specified in the license, the licensee shall either:

(i) Submit an application for license renewal; or

(ii) Notify the Department, in writing, if the licensee decides not to renew the license.

(f) If a licensee does not submit a notification for a license renewal under Section 13 of this Chapter the licensee shall, on or before the expiration date specified in the license:

(i) Terminate use of licensed material;

(ii) Remove radioactive contamination to the extent practicable;

(iii) Properly dispose of the licensed material;

(iv) Submit a completed Department Form URP-314 or equivalent; and

(v) Conduct a radiation survey of the premises where the licensed activities were carried out and submit a report of the results of this survey, unless the licensee demonstrates in some other manner that the premises are suitable for release in accordance with the criteria for decommissioning in this Chapter or the requirements in Criterion 6(6) of 10 C.F.R. Part 40, Appendix A. The licensee shall:

(A) Report levels of radioactivity, including alpha and beta in units of µCi per 100cm^2 removable and fixed for surfaces, µCi per milliliter for water, and pCi per gram for solids such as soils or concrete; and report levels of gamma radiation in units of microroentgen per hour at one meter from the surface.

(B) Specify the instrumentation used and certify that each instrument was properly calibrated and tested.

(C) If no residual radioactivity attributable to activities conducted under the license is detected or detectable residual radioactivity is below release criteria found in this Chapter, 10 C.F.R. 40 Appendix A, the licensee shall certify in writing that no detectable radioactivity contamination was found or it was below release criteria (Department Form URP-314 or equivalent). The Department will notify the licensee, in writing, of the termination of the license.

(D) If detectable levels of residual radioactive contamination attributable to activities conducted under the license are found above release criteria, the license continues in effect beyond the expiration date, if necessary, with respect to possession of residual radioactivity or radioactive material present as contamination until the Department notifies the licensee in writing that the license is terminated. During this time the licensee is subject to the provisions of subsection (c) of this section.

(g) In addition to the information provided in subsection (f) of this Section, the licensee shall submit a plan for decontamination within twelve (12) months after the time of license expiration, contemplating for the residual radioactivity remaining at the time the license expires.

Section 12. Renewal of Licenses.

(a) A licensee shall notify the Department of their intent to renew their license at least thirty (30) days prior to the expiration of the existing license.

(i) Upon receipt of the notification to renew, the Department shall open the original license application, including, but not limited to, all applicable renewals and amendments, to:

(A) Ensure the application accurately reflects current operations;

(B) Incorporates changes to industrial standards codified in these rules; and

(C) Incorporate operational data to accurately set design objectives.

(b) If an application for renewal has been filed at least thirty (30) days before the expiration date stated in the existing license, the existing license expires at the end of the day on which the Department makes a final determination to deny the renewal application or, if the determination states an expiration date, the expiration date stated in the determination.

Section 13. Amendments of Licenses at Request of Licensee.

(a) Application for amendment of a license shall be filed in accordance with Section 9 of this Chapter and shall specify the items which the licensee desires the license to be amended and the grounds for such amendment such items being beyond the scope of the licensee's ability to address under its performance based license.

(b) In considering an application by a licensee to renew or amend his license the Department will apply the applicable criteria set forth in Section 8(a) of this Chapter.

Section 14. Modification and Revocation of Licenses.

(a) The terms and conditions of all licenses shall be subject to amendment, revision, or modification at the request of the licensee.

(b) The Department may suspend or revoke a license for significant noncompliance to the Act, rules, regulations, or orders issued by the Department.

(c) The Department may suspend or revoke any license in whole or in part, for any false material statement in the application, any false statement of fact required under the provisions of the Act, or because of any report, record, or inspection or other means which would warrant the Department to refuse to grant a license on an original application.

(d) Except in the case of wanton and willful behavior or in situations where the public health, interest, or safety requires otherwise, no license shall be modified, suspended, or revoked unless, prior to the institution of proceedings therefore, facts or conduct which may warrant such action shall have been called to the attention of the licensee in writing and the licensee shall have been accorded an opportunity to demonstrate or achieve compliance with all lawful requirements.

Section 15. Public Notice.

(a) Upon completion of the Department's review of an application, the Department shall provide notice to the public of issuance of an initial draft decision where the license application is approved, approved with conditions, or denied.

(i) The initial draft decision shall include, but is not limited to, the following:

(A) A decision analysis, that includes discussions on environmental impacts; and

(B) The final technical analysis conducted by the Department.

(ii) Upon issuance of the initial draft decision described in Section 15(a)(i), or a licensing action that significantly impacts the environment or public health and safety, the Department shall initiate a public comment process, and hold a public hearing upon written request from an "aggrieved party" as defined in W.S. § 35-11-103(a)(vii). If a public hearing is requested, the Department shall publish notice of the public hearing in a newspaper of statewide or general circulation or on the Department's website before the public hearing. The notice of the public hearing shall include:

(A) The time, place, and nature of the hearing;

(B) A copy of the initial draft decision; and

(C) A statement detailing where public comments may be submitted.

(iii) Pursuant to the request and notice described in Section 15(a)(ii), the Department shall hold a public hearing. Such hearing shall be transcribed and, at a minimum, require:

(A) The opportunity for cross-examination;

(B) A summary of the licensing activity proposed in the application; and

(C) An opportunity for the public to comment and be heard.

(iv) The Rules of Practice and Procedure applicable to hearings before the Department shall apply to hearings before the Department. To the extent that any inconsistencies exist between the Rules of Practice and Procedure and these rules, these rules shall govern.

(b) For applications which are denied, the Department shall issue a written summary containing the basis for denial.

(c) The applicant or licensee shall pay for the expenses associated with public notice, public comment, or public meetings associated with the specific licensing request by the applicant or licensee.

(d) Following the public comment period and public hearing associated with a

specific licensing request, the Department shall, after review of the public comments received by the Department, issue a written final decision. The final decision must ban all major construction before the completion of the written environmental analysis. The final decision is subject to review by the Environmental Quality Council and judicial review in accordance with Wyoming law.

Section 16. Decommissioning Requirements.

(a) The licensee shall notify the Department in writing within sixty (60) days of the licensee deciding to permanently cease principle activities at the entire site or in any separate building or outdoor area that contains residual radioactivity such that the building or outdoor area is unsuitable for release in accordance with these regulations.

(b) The licensee shall notify the Department in writing within sixty (60) days if no principle activities under the license have been conducted for a period of twenty-four (24) months; or no principle activities have been conducted for a period of twenty-four (24) months in any separate building or outdoor area that contains residual radioactivity such that the building or outdoor area is unsuitable for release in accordance with NRC regulations.

(c) From the date of written notification sent to the Department required in Sections 16(a) and (b), the licensee shall either:

(i) Begin decommissioning activities; or

(ii) Within twelve (12) months of written notification submit a decommissioning plan, if required by section 17(a) of this Chapter or 10 C.F.R. Part 40, Appendix A, and begin decommissioning upon the Department approval of that plan.

(d) The Department may grant a request to delay or postpone initiation of the decommissioning process if the Commission determines that such relief is not detrimental to the public health and safety and is otherwise in the public interest.

(e) Coinciding with and in addition to the notification requirements of Sections 16(a) and (b) of this Chapter, the licensee shall maintain in effect all decommissioning financial assurances as required by 10 C.F.R. Part 40, Appendix A. The amount of financial assurance must be increased, or may be decreased, as appropriate, to cover the detailed cost estimate for decommissioning established pursuant to Section 17 of this Chapter.

(f) The Department may approve an alternate schedule for the submission of plans and for the completion of decommissioning as required pursuant to Sections 16(a) and (b) if the Department determines that the alternate schedule: (1) is necessary to effectively conduct decommissioning, (2) presents no undue risks to public health and safety, and (3) is otherwise in the public's interest. The request for an alternate schedule must be submitted no later than thirty (30) days before the required notification in Section 16(a) of this Chapter. The schedule for decommissioning may not commence until the Department has made a determination on the request for an alternate schedule.

(g) Except as provided in subparagraph (e) of this Section,

(i) Licensees shall complete decommissioning of the site or separate building or outdoor area as soon as practicable but no later than twenty-four (24) months following the initiation of decommissioning.

(ii) Except as provided in subparagraph (f)(i) of this Section, when decommissioning involves the entire site, the licensee shall request license termination as soon as practicable but no later than twenty-four (24) months following the initiation of decommissioning.

(h) As the final step in decommissioning, the licensee shall:

(i) Certify the disposition of all licensed material, including accumulated wastes, by submitting a Department Form URP-314 or equivalent; and

(ii) Conduct a radiation survey of the premises where the licensed activities were carried out and submit a report of the results of this survey, unless the licensee after approval by the Department demonstrates in some other manner that the premises are suitable for release in accordance with the criteria for decommissioning in this Chapter or criteria in 10 C.F.R. Part 40, Appendix A. The licensee shall, as appropriate:

(A) Report levels of gamma radiation in units of microroentgen (millisieverts) per hour at one meter from surfaces, and report levels of radioactivity, including alpha and beta, in units of microcuries (disintegrations per minute or megabecquerels) per 100 square centimeters removable and fixed for surfaces, microcuries (megabecquerels) per milliliter for water and picocuries (becquerels) per gram for solids such as soils or concrete; and

(B) Specify the survey instrument(s) used and certify that each instrument is properly calibrated and tested.

(i) Specific licenses, including expired licenses, will be terminated by written notice to the licensee when the Department determines, where applicable, that:

(i) Licensed material has been properly disposed;

(ii) Reasonable effort has been made to eliminate residual radioactive contamination, if present; and

(iii) A radiation survey has been performed which demonstrates that:

(A) The premises are suitable for release in accordance with the applicable criteria for decommissioning found in 10 C.F.R. Part 40, Appendix A; and

(B) Other information submitted by the licensee is sufficient to demonstrate that the premises are suitable for release in accordance with the applicable criteria found in 10 C.F.R. Part 40, Appendix A.

(iv) The licensee has satisfied the applicable technical and other requirements for closure and reclamation of an 11e.(2) byproduct material disposal site; and

(v) The NRC has made a determination that all applicable standards and requirements have been met.

(j) Specific licenses for uranium and thorium milling are exempt from subparagraph (e) of this section with respect to reclamation of tailings impoundments and/or waste disposal areas.

(k) A licensee may request that a subsite or a portion of a licensed area be released for unrestricted use before full license termination as long as release of the area of concern will not adversely impact the remaining unaffected areas and will not be recontaminated by ongoing authorized activities. When the licensee is confident that the area of concern will be acceptable to the Department for release for unrestricted use, a written request for release for unrestricted use and Department confirmation of closeout work performed shall be submitted to the Department. The request should include a comprehensive report, accompanied by survey and sample results that show contamination is less than the limits specified in 10 C.F.R. Par 40, Appendix A and an explanation of how ongoing authorized activities will not adversely affect the area proposed to be released. Upon confirmation by the Department that the area of concern is releasable for unrestricted use, the licensee may apply for a license amendment, if required.

(i) The Department will submit site releases to the NRC in accordance to SA-900 for approval; and.

(ii) Prior to terminating any license, the Administrator of the Land Quality Division receive approval and a determination from the NRC that the licensee has complied with the NRC's decontamination, decommissioning, disposal, and reclamation standards in accordance with SA-900.

Section 17. Decommissioning Plan.

(a) Each licensee authorized to receive, possess, and use licensed material shall submit a plan for completion of decommissioning, if the procedures necessary to carry out decommissioning:

(i) Have not been previously approved by the Department; or

(ii) Could increase potential health and safety impacts to workers or to the public, such as in any of the following cases:

(A) Procedures would involve techniques not applied routinely during cleanup or maintenance operations;

(B) Workers would be entering areas not normally occupied where surface contamination and radiation levels are significantly higher than routinely encountered during operation;

(C) Procedures could result in significantly greater airborne concentrations of radioactive materials than are present during operation; or

(D) Procedures could result in significantly greater releases of

radioactive material to the environment than those associated with operation.

(b) Procedures with potential health and safety impacts may not be carried out prior to approval of the decommissioning plan.

(c) The proposed decommissioning plan, if required by this Chapter or by license condition must include:

(i) Description of the condition of the site, separate buildings, or outdoor areas sufficient to evaluate the acceptability of the plan;

(ii) Description of planned decommissioning activities;

(iii) Description of methods used to assure protection of workers and the environment against radiation hazards during decommissioning;

(iv) A description of the planned final radiation survey; and

(v) An updated detailed cost estimate for decommissioning, comparison of that estimate with present funds set aside for decommissioning, and plan for assuring the availability of adequate funds for completion of decommissioning.

(A) For decommissioning plans calling for completion of decommissioning later than twenty-four (24) months after plan approval, the licensee must provide a justification for any delay based on the criteria in subsection (f) of this Section.

(d) Except as provided in subsection (f) of this Section, the licensee shall complete decommissioning of the site, separate buildings, and outdoor area as soon as practicable but no later than twenty-four (24) months following the initiation of decommissioning.

(e) Except as provided in subsection (f) of this Section, when decommissioning involves the licensed area, the licensee shall request license termination as soon as practicable but no later than twenty-four (24) months following the initiation of decommissioning.

(f) The Department may approve a request for an alternate schedule for completion of decommissioning of the site or separate building or outdoor area, and license termination if appropriate and if the Department determines that the alternative schedule is warranted. In doing so, the Department shall consider the following:

(i) Whether it is technically feasible to complete decommissioning within the allotted twenty-four (24) month period;

(ii) Whether sufficient waste disposal capacity is available to allow completion of decommissioning within the allotted twenty-four (24) month period;

(A) Including whether a significant volume reduction in wastes requiring disposal will be achieved by allowing short-lived radionuclides to decay.

(iii) Whether a significant reduction in radiation exposure to workers can be achieved by allowing short-lived radionuclides to decay; and

(iv) Other site specific factors which the Department may consider appropriate on a case-by-case basis, such as the regulatory requirement of other government agencies, lawsuits, groundwater treatment activities, monitored natural groundwater restoration, actions that could result in more environmental harm than deferred cleanup, and other factors beyond the control of the licensee.

(g) After submittal and upon approval of the decommissioning plan by the Department, the licensee shall decommission in accordance with the approved plan. As a final step in the decommissioning the licensee shall:

(i) Certify the disposition of all licensed material, including accumulated wastes, by submitting a completed Department Form URP-314 or equivalent;

(ii) Conduct a radiation survey of the premises where the licensed activities were carried out and submit a report of the results of this survey, unless the licensee demonstrates in some other manner that the premises are suitable for release in accordance with the criteria for decommissioning in this Chapter or the requirements in Criterion 6(6) of 10 C.F.R. Part 40, Appendix A. The licensee shall:

(A) Report levels of gamma radiation in units of microroentgen (millisieverts) per hour at one meter from surfaces, and report levels of radioactivity, including alpha and beta, in units of microcuries (disintegrations per minute or megabecquerels) per 100 square centimeters removable and fixed for surfaces, microcuries (megabecquerels) per milliliter for water and picocuries (becquerels) per gram for solids such as soils or concrete; and

(B) Specify the survey instrument(s) used and certify that each instrument is properly calibrated and tested.

CHAPTER 5

NOTICES, INSTRUCTIONS, AND REPORTS TO WORKERS

Section 1. Purpose.

(a) This Chapter establishes requirements for notices, instructions, and reports by licensees to individuals engaged in work under a license and options available to such individuals in connection with the Department's inspections of licensees to ascertain compliance with the provisions of the Wyoming Environmental Quality Act, Wyoming Statute §§ 35-11-2001 *et seq*, and regulations, orders, and licenses issued thereunder regarding radiological working conditions as specified within the provision of the Atomic Energy Act of 1954, as amended.

Section 2. Scope.

(a) This Chapter applies to all persons who receive, possess, use, own, or transfer licensed material.

Section 3. Incorporation by Reference (IBR) of 10 Code of Federal Regulations (C.F.R.) Part 19; Notice, Instructions and Reports to Workers: Inspection and Investigations.

(a) The Department fully adopts and hereby incorporates by reference 10 C.F.R, Part 19, revised as of January 1, 2017, including all sections and any notes and appendices therein, unless expressly provided otherwise in these rules. These rules do not include any later amendments or editions of the incorporated matter.

(b) The following 10 C.F.R. sections as listed on January 1, 2017 are excluded from these rules: 19.1, 19.2, 19.3, 19.5, 19.8, 19.14(a), and 19.18.

(c) Any references in 10 C.F.R. Part 19 adopted by reference to the United States Nuclear Regulatory Commission (NRC) or any component thereof shall be deemed to be a reference to the Department.

(d) Any reference in the federal rules adopted by reference to the Commission's "Form 3" shall be deemed a reference to the Department's "Uranium Recovery Program Form 3."

CHAPTER 6

FINANCIAL ASSURANCE REQUIREMENTS

Section 1. Purpose.

(a) This Chapter provides for financial assurance arrangements in support of decontamination, decommissioning, reclamation, restoration, disposal, and any other activity required by the Department, for costs associated with the licensed facilities and sites.

Section 2. Scope.

(a) This Chapter sets forth the requirements of Wyoming Statute (W.S.) §§ 35-11-417 through 418 and 35-11-2003(e) for the establishment of financial assurance arrangements for licensees listed in these rules. Such financial assurance arrangements may consist of surety bonds, federally insured certificates of deposit payable to the Department, cash deposits, certificates of deposits, deposits of government securities, irrevocable letters of credit issued by a bank organized to do business in the United States, or any combination of approved mechanisms.

(b) Licensees shall comply with the requirements of 10 Code of Federal Regulations (C.F.R.) Part 40, Appendix A, Criterion 9 and 10, as incorporated by reference in Chapter 4 of these rules.

Section 3. Terms Unique to Financial Assurance.

(a) "Annual Review" is conducted during the review of the annual report which is due on the anniversary date of the establishment of the permit to mine or source material license in circumstances where no permit exists.

(b) "Cost Estimate" means a document containing the total costs that would be incurred if an independent contractor were hired to perform the decommissioning of the facility and disposal of licensed material, and all associated costs to the Department in conducting decommissioning oversight. Costs must reflect current approved estimated costs.

(c) "Facility" means the location within one building, vehicle, or under one roof and under the same administrative control: (1) at which the possession, use, processing, or storage of licensed material is or was authorized; or (2) may also mean multiple such locations at a site or part of a site.

Section 4. Financial Assurance.

(a) The Department requires specific source and byproduct material licensees to furnish a decommissioning financial assurance arrangement in a dollar amount approved by the Department, as necessary to protect public health and safety, to ensure corrective action during operation, to ensure decontamination and decommissioning of a facility or site, and for disposal of licensed material in the event of abandonment, insolvency, or other inability of the licensee to meet the requirements of the license, the Act, or these rules.

(b) The costs associated with reclamation and long term care and maintenance in accordance with this chapter shall be sufficient to ensure compliance with those standards established by the Department pertaining to bonds, sureties, and other financial arrangements to ensure adequate reclamation and long term management of such byproduct material and its disposal.

(c) Licensees shall provide the Department with cost-estimates that are reasonably accurate and these estimates shall include costs for the following:

(i) Disposal of licensed material;

(ii) Decontamination and decommissioning of buildings, facilities, and the site to a standard which achieves levels that allow release for unrestricted use of these areas upon decommissioning;

(iii) Reclamation of byproduct material disposal areas in accordance with the technical criteria detailed in 10 C.F.R. Part 40, Appendix A;

(iv) Aquifer restoration which is based on the physical characteristics of the mining aquifer; the cost of equipment, labor, and administration; and any other data required under 10 C.F.R. Part 40, Appendix A Criterion 5(b)(5) and Chapter 11 of the Non-Coal Rules and Regulations;

(A) Other operational activities that have impacted groundwater as detailed in 10 C.F.R. Part 40, Appendix A, Criterion 5(b).

(v) Costs that would be incurred if an independent contractor was hired to dispose of radioactive materials and perform decontamination, decommissioning, and reclamation work including:

(A) The cost of removal and/or disposal of licensed material which is generated, stored, processed, or otherwise present at the facility or site; and

(B) The probable extent of contamination through the possession or use of licensed material, at or adjacent to the facility or site, and the probable cost of removal of such contamination;

(vi) An adequate contingency factor.

(vii) For sites requiring long-term care and maintenance, a minimum charge of two-hundred and fifty thousand dollars ($250,000.00), in 1978 dollars, shall be included in the financial assurance established by the licensee to cover the costs of long-term care and maintenance.

(d) Prior to approval of an application for a new license, an applicant shall establish financial assurance arrangements to ensure the decontamination and decommissioning of the facility.

(e) Prior to termination of a license, a licensee shall establish a fund adequate and sufficient to cover the payment of the cost for long-term care and monitoring, the amount of which shall be approved by the NRC, pursuant to Criteria 9 and 10 of 10 C.F.R. Part 40, Appendix A.

(f) Applicants shall provide an executed original copy of each financial assurance instrument required by this Chapter for approval by the Department as appropriate.

(i) An applicant for a new license shall submit a certification that financial assurance for decommissioning has been provided in the amount required by this Chapter. An executed original copy of each financial assurance instrument required by this Chapter and approved by the Department shall be submitted to the Department sixty (60) days prior to the approval of the Permit to Mine and Source Material License.

Section 5. Acceptable Financial Assurance Methods.

(a) Refer to W.S. §§ 35-11-417 through 418 for acceptable financial instruments and assurances.

(b) Self-insurance, or any arrangement that essentially constitutes self-insurance (for example, a contract with a state or federal agency), including bonding pursuant to W.S. § 35-11-417(d) will not satisfy the financial assurance requirements of these rules.

(c) The term of the financial assurance warranty shall automatically renew until termination of the license by the Department, unless it can be demonstrated that another arrangement would provide an acceptable level of assurance. The requirements for cancelation or substitution of the financial assurance warranty are outlined in W.S. §§ 35-11-420 and 35-11-421.

(d) The value of the financial assurance warranty shall not be dependent upon the success, profitability, or continued operation of the licensed operation.

Section 6. Periodic Review of Financial Assurances.

(a) As part of the annual report, a licensee shall provide to the Department written proof of the value of existing financial warranties and any licensee-proposed changes to the financial assurance warranties, including updated decommissioning plans, changes in cost estimates, or the changes to the type of warranty. The report shall describe any changes in operations, estimated costs, or any other circumstances that may affect the amount of required financial assurance warranties, including any increased cost attributable to inflation.

(b) Each financial assurance shall be subject to annual review, at a minimum, and approval by the Department to assure its continued adequacy of each warranty.

(c) With the approval of the Department, changes to the amount of a decommissioning financial assurance instrument may occur to account for increases or decreases in cost estimates resulting from inflation or deflation, changes in engineering plans, activities performed, or changes in any other condition affecting disposal, decontamination, and

decommissioning costs.

(i) With the approval of the Department, reduction in the amount of decommissioning financial assurance may occur as decommissioning activities are completed, in accordance with an approved decommissioning plan or to reflect current site conditions and license authorization.

(d) Appropriate and adequate decommissioning financial assurances shall be maintained in effect and in good standing by the licensee until termination of the license or as otherwise authorized by the Department, regardless of whether decommissioning is phased through the life of licensed operations or occurs at the end.

Section 7. **Long-Term Care and Maintenance Financial Assurances.**

(a) In addition to the decommissioning warranty required by this Chapter, the Department may require licensees to provide a long-term care warranty of the licensed facility if the facility will remain a disposal site for 11e.(2) byproduct material subsequent to the termination of the license, or the license will be terminated using the criteria in 10 C.F.R., Part 40, Appendix A.

(i) The amount of funds to be provided by such long-term care warranties shall be based on approved cost estimates as determined by the Department, U.S. Department of Energy (DOE), and NRC, and shall be sufficient to cover the annual costs of site surveillance, including reasonable administrative costs incurred, subsequent to the termination of the license.

(ii) For each licensee going to long-term care, the long-term care warranty must have a minimum value equivalent to two hundred and fifty thousand dollars ($250,000.00) in 1978 dollars.

(A) The value of the long-term care warranty shall be adjusted annually to recognize inflation.

(I) The inflation rate to be used for this adjustment is that indicated by the change in the Consumer Price Index for All Urban Consumers published by the U.S. Department of Labor, Bureau of Labor Statistics.

(II) The Licensee may use other reasonable resources to analyze the inflation rate provided the amount of long-term care warranty is acceptable to the Department.

(iii) Cost estimates for facilities and sites requiring long-term care subsequent to license termination are to be based on the final disposition of wastes such that ongoing active maintenance is not necessary to preserve isolation.

(A) It is expected that, at~~s~~ a minimum, annual site inspections shall be conducted to confirm the integrity of the stabilized waste systems and to determine the need, if any, for maintenance and/or monitoring.

(B) Cost estimates shall be adjusted if more frequent site inspections are required based on an evaluation of a particular site.

(iv) For sites decommissioned in accordance with 10 C.F.R. Part 40, Appendix A, -cost estimates for long-term care subsequent to license termination must be sufficient to enable the Department or the DOE to:

(A) Perform periodic site inspections at least every five (5) years;

(B) Assure the continuation of institutional controls; and

(C) Assume responsibilities and carry out any necessary control and maintenance of the site. Cost estimates shall be adjusted to account for more frequent site inspections as required by the Department.

(v) Upon the determination by the Department that disposal, decommissioning, and decontamination requirements have been satisfied, and after the NRC has approved the Department's determination, the Department shall transfer the custody of the site and any funds for long-term care to the appropriate regulatory agency assuming long-term care and custody. Such funds include, but are not limited to, sums collected for long-term care and maintenance (i.e. continued site observation, monitoring, and necessary maintenance). Such funds do not include monies held as surety where no default has occurred and the required reclamation or other bonded activity has been performed.

(A) If the value of the long-term care warranty funds exceeds the amount required by the regulatory agency overseeing the long-term care of the site, then all such excess amounts shall be returned to the licensee.

Section 8. Financial Assurance Recordkeeping.

(a) Licensees shall keep records of financial assurances throughout the life of the license, including, but not limited to, records of the cost estimate performed for the decommissioning, the amount certified for decommissioning, and records of the funding method used for assuring funds.

CHAPTER 7

FEES

Section 1. Purpose.

(a) As authorized by the Act to support all direct and indirect costs associated with the operation of the Program, this Chapter establishes fees for radiation control services rendered by the Department and provisions regarding payment.

Section 2. Scope.

(a) These rules apply to a person who is:

(i) An applicant for or holder of a specific byproduct or source material license issued by the Department pursuant to Chapter 4 of these rules or by the NRC or another Agreement State; and

(ii) Required to have routine and non-routine safety inspections of licensed activities.

Section 3. Costs Generally.

(a) "Direct Costs" are operating costs directly assignable to the Program. Direct Costs include salaries, supplies, travel, and other costs incurred by the Program such as, but not limited to, costs associated with processing license applications, inspecting sites, and developing program rules.

(b) "Indirect Costs" are costs not directly assignable to the Program. Indirect Costs include the cost of activities such as human resource management, procurement, and accounting. Indirect Costs include the partial costs of state agencies such as Administration and Information, the Treasurer's Office, and other state agencies providing support or resources to the Program. These are costs which indirectly support the ability of the Program to function, but are not directly related to producing or inspecting a license or the immediate management of those functions. Uncollected fees from licensees will be charged as Indirect Costs for the following year. Indirect Costs will be collected by the Department as described in Section 4, below.

(c) Direct Costs fall into two different categories:

(i) "Site Specific Direct Costs" are incurred by the Department in the form of time and resources for a specific applicant or licensee. Site Specific Direct Costs shall include, but are not limited to, the costs of reviewing applications, amendments, inspections, or incident responses.

(ii) "Non-Site Specific Direct Costs" are not attributable to a specific licensee, but represent a cost to the Department attributable to the Program. These types of costs shall include, but are not limited to, materials such as paper and other office supplies, training of staff,

development of guidance documents, and other general administrative costs.

(d) The accumulation of costs can be described as follows:

(i) "Total Direct Costs" are the combination of the Site Specific Direct Costs and Non-Site Specific Direct Costs.

(ii) "Total Costs" are the sum of Site Specific Direct Costs, Non-Site Specific Direct Costs, and Indirect Costs.

(e) "Fiscal Year" is the twelve (12) month period from July 1 through June 30, as used by the State of Wyoming for budget formulation and execution.

(f) "Projected Costs" are the most recent two (2) year average of Total Costs assumed by the licensee.

Section 4. Tracking Costs.

(a) The Department shall keep a record of Site Specific Direct Costs associated with each license.

(b) Non-Site Specific Direct Costs shall be distributed to all licensees based on the proportion of an individual licensee's Site Specific Direct Costs, as compared to the combined Total Costs of all licensees. For example, if company X demands roughly fifty percent (50%) of the total billable Site-Specific Direct Costs for the Program they will be charged fifty percent (50%) of the Non-Site Specific Direct Costs.

(c) Indirect Costs will be calculated and allocated to licensees and the Program using the rates and basis for application detailed in the Cognizant Agency Negotiation Agreement, negotiated between the Department and the federal government. Indirect Costs are applied to both Site Specific and Non-Site Specific Direct Costs.

Section 5. Application Fees.

(a) All new license applications shall be accompanied by an initial one hundred thousand dollar ($100,000.00) application fee. The application fee shall only cover the costs associated with processing the license application.

(b) The application fee shall be carried forward until the Department issues a license to the applicant. If the application fee is expended before the license is issued, an additional one hundred thousand dollar ($100,000.00) application fee shall be assessed and collected from the applicant. This shall continue in increments of one hundred thousand dollars ($100,000.00) until the Department issues a license to the applicant.

(c) Once the Department issues a license, the new licensee will be refunded or credited the amount of any unused portions of the application fee.

(d) Applicants that withdraw an application will not be refunded the unused

application fee and forfeit any remaining initial application fees paid to the Department. However, applicants that withdraw an application after paying the additional application fees, as described in subparagraph (b) above, shall be refunded the unexpended balance of the additional application fees.

Section 6. Annual Fees.

(a) Annual fees are to be paid in full prior to the fiscal year for which the fees are assessed. The Department shall notify all licensees of the amount of their annual fee ninety (90) days prior to the start of the fiscal year. The annual fee must be received and processed prior to the Department taking any licensing or other requested action.

(b) Until the Department can establish Projected Costs for a licensee, the licensee shall be billed a predetermined annual fee. The predetermined annual fee shall be equal to the annual estimated cost of the Program divided by the total number of licensees.

(c) Once the Department establishes Projected Costs for a licensee, the licensee shall be assessed an annual fee based on the licensee's average Total Costs from the previous two years of operation.

(d) A new licensee shall be billed an annual fee equal to the average Total Costs of all licensees, until Projected Costs can be established.

(e) Following recognition of all costs for a fiscal year, the Department shall prepare a statement for each licensee showing the itemized actual Total Costs for the fiscal year.

(i) If the annual fee collected from the licensee exceeds the Total Costs attributable to the licensee, the statement shall be accompanied by a credit or refund of the difference in amounts to the licensee.

(ii) If the annual fee collected from the licensee is less than the Total Costs attributable to the licensee, the statement shall be accompanied by an invoice covering the difference in amounts owed to the Department. The licensee shall have sixty (60) days from the date of the invoice to pay the Department the full outstanding balance of the invoice.

(f) New licenses issued after the beginning of the fiscal year will be assessed an annual fee, as described above, but the fee will be prorated based on the date the license was issued.

(g) Failure to pay prescribed fees may result in, and is not limited to, the Department halting the processing of an amendment, suspending or revoking a license, or issuing a notice of violation and order as the Department deems necessary and appropriate to carry out the provisions of the Act.

(h) The minimum annual fee for all licensees is one thousand dollars ($1,000.00).

Section 7. Method of Payment.

Payments made under this Chapter shall be paid in U.S. dollars through electronic funds

transfer, check, or money order made payable to the Wyoming Department of Environmental Quality.

CHAPTER 8

RISK INFORMED, PERFORMANCE BASED LICENSING AND INSPECTION

Section 1. Purpose.

(a) This Chapter establishes a risk informed, performance based regulatory framework as it will be applied to licensees regulated by the Program. No undue risk to public health, safety, or the environment shall occur as a result of licensed operations by the licensee under this regulatory framework.

Section 2. Scope.

(a) Except as otherwise specifically provided, this Chapter applies to all persons who acquire, own, possess, use, transfer, offer and receive for transport, use, or dispose of any licensed material pursuant to these rules. Nothing in this Chapter shall apply to any person subject to regulation not relinquished by the NRC.

Section 3. Regulatory Approach.

(a) The Department shall determine licensing inspection actions, enforcement, and other decisions by the Program based on the risk informed, performance based regulatory approach which is a combination of the following approaches:

(i) "A risk~~ed~~ informed approach" to regulatory decision-making represents a philosophy whereby risk insights are considered together with other factors to establish requirements that better focus licensee and regulatory attention on design and operational issues, pertaining to licensed material safety, commensurate with their importance to employee health and safety, public health and safety, and environmental protection.

(ii) "A performance based approach" to regulatory decision making represents a philosophy whereby performance standards are established that must be achieved by the licensee, but provides flexibility to the licensee as to the means of meeting those standards. This approach emphasizes results over process and methods and uses those results as the primary basis for regulatory decision-making. This approach incorporates the following attributes:

(A) Measurable (or calculable) parameters (i.e., direct measurements of the physical parameter of interest or of related parameters that can be used to calculate the parameter of interest) that exist to monitor a system, including facility and licensee performance;

(B) Objective criteria to assess performance are established based on risk insights, deterministic analysis, and performance history;

(C) Flexibility for licensees to determine how to meet the established performance criteria in ways that will encourage and reward improved outcomes; and

(D) Failure to meet a performance criterion, while undesirable, will not in

and of itself constitute or result in an immediate safety concern.

(b) As part of the risk informed performance based regulatory approach, the Department shall utilize risk insight, engineering analysis and judgment, including the principle of defense-in-depth and incorporation of safety margins, and performance history to:

(i) Focus attention on the areas of greatest potential significance to human health, safety, and the environment;

(ii) Establish objective criteria for evaluating performance;

(iii) Develop measurable or calculable parameters for monitoring system

and license performance;

(iv) Provide flexibility to licensees to determine how to meet the established performance criteria in a way that will encourage and reward outcomes; and

(v) Focus on the results as the primary basis for regulatory decisions.

Section 4. Changes, Tests, or Experiments.

(a) Subject to the conditions in Section 4(b) of this Chapter and without obtaining a license amendment pursuant to Chapter 4 of these rules, a licensee may:

(i) Make changes to the components of the licensed facility, which have a nexus to licensed material described in the most updated license application;

(ii) Make changes in the procedures as described in the most updated license application involving licensed material; and

(iii) Conduct tests or experiments not described in the most updated license application involving licensed material.

(b) The licensee shall obtain a license amendment pursuant to Chapter 4 of these rules prior to implementing a proposed change, test, or experiment if the change, test, or experiment would result in or create the following:

(i) More than a minimal increase in the frequency of occurrence of an accident involving licensed materials, previously evaluated in the most updated license application;

(ii) More than a minimal increase in the likelihood of occurrence of a malfunction of facility structure equipment, or monitoring system (SEMS) important to licensed material safety previously evaluated in the most updated license application;

(iii) More than a minimal increase in the consequence of an accident involving licensed material previously evaluated in the most updated license application;

(iv) More than a minimal increase in the consequences of a malfunction of a

SEMS important to licensed material safety previously evaluated in the most updated license application;

(v) A possibility for a credible and potentially significant accident scenario of a different type, involving licensed material, than any previously evaluated in the most updated license application;

(vi) A possibility for a malfunction of a SEMS important to licensed material safety with a different result than previously evaluated in the most updated license application; and

(vii) A departure from the method of evaluation of radiological safety described in the most updated license application used by the Department. For NRC licenses transferred and recognized by the Department, a departure from the method of evaluation of radiological safety discussed in the NRC's final safety evaluation report (SER), any federal environmental impact statement (EIS) or environmental assessment (EA), technical evaluation reports (TER), or other analyses and evaluation for license amendments.

(c) For purposes of this Chapter, and as applied to NRC licenses recognized by the Department, SEMS means any SEMS which have been referenced in an NRC SER, TER, EA, or EIS, including supplements and amendments thereof.

(d) Licensees must obtain a license amendment unless the change, test, or experiment is consistent with the Department's and NRC's previous conclusions pertaining to radiological safety, or the basis of, or analysis leading to, the conclusion of actions, designs, or design configuration analyzed and selected in the site or facility's SER, TER, and EIS, or EA performed by the NRC. This would include all supplements and amendments, and TERs, EAs, and EISs issued with amendments to a license. NRC's previous conclusions would include, but would not be limited to Regulatory Issues Summaries (RIS), executive orders, or information notices.

Section 5. Safety and Environmental Review Panel.

(a) Each licensee shall develop a Safety and Environmental Review Panel (SERP). The SERP’s purpose is to evaluate changes to the license application, procedures, or physical processes to the criteria in Section 4 of this Chapter and determine if the action can be completed without a license amendment.

(b) The SERP shall consist of, at a minimum, the following three members that are employees of the licensee:

(i) One member having expertise in management (e.g., Plant Manager).

This member shall be responsible for financial approval for changes;

(ii) One member having expertise in operations or construction. This member shall have responsibility for implementing any operational changes; and

(iii) One member that is the licensee’s radiation safety officer (RSO) or equivalent. This member shall maintain the responsibility of assuring changes conform to radiation

safety and environmental requirements. The Department may approve a qualified contractor to fulfill this role where circumstances prevent the licensee from utilizing a qualified employee. Department approval must be obtained in writing.

(c) Additional members of the SERP may include, as appropriate, individuals to address and assist with technical aspects such as ground or surface water hydrology, specific earth sciences, or other technical disciplines. Temporary or permanent members, other than the three above-specified individuals, may be consultants or contractors.

(d) The licensee shall maintain records of any changes made pursuant to this Chapter until license termination. These records shall include written safety and environmental evaluations made by the SERP that provide the basis for determining changes are in compliance with Section 4 of this Chapter. The licensee shall furnish, in an annual report to the Department, a description of such changes, tests, or experiments, including a summary of the safety and environmental evaluation of each made pursuant to this Chapter. In addition, the licensee shall annually submit to the Department any changed pages, which shall include both a change indicator for the area changed (i.e., a bold line vertically drawn in the margin adjacent to the portion actually changed), and a page change identification (date of change or change number), to the Operations Plan and Reclamation Plan of the most updated approved license application to reflect changes made under this condition.

(e) All SERP evaluations shall be made available to the Department during site inspections. The Department may review all the SERP evaluations to ensure that it concurs with the conclusions. In events where the Department disagrees with the conclusions of a SERP, an amendment application will be required. The Department may take enforcement action or issue penalties as necessary relative to the SERP evaluations.

Section 6. Contents of a SERP Evaluation.

(a) The evaluation through the SERP process must answer the items presented in Sections 4(b) and 4(c) of this Chapter. For each item the evaluation shall present their justification and this document shall be reviewed by the Department at the time of inspection for concurrence. Certain items within Section 4 of this Chapter may require a risk assessment to be performed to determine the significance of an event. Those risk assessments will be reviewed by the Department at the time of the inspection.

Section 7. Exclusions to the SERP Process.

(a) The following items shall not be approved through the SERP process and shall be sent to the Department as a license amendment for approval:

(i) Amending license conditions; and

(ii) Changes to license boundary.

(b) Wellfield data packages must be approved by the Department, but the items having a radiological nexus that do not change from wellfield to wellfield may go through the SERP process.

CHAPTER 9

TRANSPORTATION OF RADIOACTIVE MATERIAL

Section 1. Purpose.

(a) This Chapter establishes requirements for packaging, preparation for shipment, and transportation of licensed material.

(b) The packaging and transport of licensed material are also subject to the Wyoming Environmental Quality Act, Wyoming Statute §§ 35-11-2001 *et seq*. (2015), the Program's rules and regulations, and the regulations of other federal agencies (such as the U.S. Department of Transportation, the U.S. Postal Service, and the Commission) having jurisdiction over means of transport. The requirements of this Chapter are in addition to, and not in substitution for, other applicable requirements.

Section 2. Scope.

(a) This Chapter applies to any licensee authorized by specific or general license issued by the Department to acquire, own, possess, use, transfer, offer or receive for transport, use, or dispose of licensed material, if the licensee delivers that material to a carrier for transport, transports the material outside the site of usage as specified in the license, or transports that material on public highways. No provision of this Chapter allows for the unauthorized possession of licensed material.

Section 3. Incorporation by Reference (IBR) of 10 Code of Federal Regulations (C.F.R.) Part 71; Packaging and Transportation of Radioactive Material.

(a) The Department fully adopts and hereby incorporates by reference 10 C.F.R. Part 71, §§ 71.0 through 71.137, revised as of January 1, 2017, including all sections and any notes and appendices therein, unless expressly provided otherwise in these rules. The U.S. Department of Transportation's regulations, as cited in 10 C.F.R. § 71.5 (January 1,2017), are also fully adopted and hereby incorporated by reference. These rules do not include any later amendments or editions of the incorporated matter.

(b) The following 10 C.F.R. sections, including all subparts, as of January 1, 2017 are excluded from these rules and are not incorporated by reference: 71.0, 71.1, 71.2, 71.6, 71.7, 71.9, 71.11, 71.13, 71.14(b), 71.15, 71.16, 71.18, 71.19, 71.22, 71.23, 71.24, 71.25, 71.31, 71.33, 71.35, 71.37, 71.38, 71.39, 71.41, 71.43, 71.45, 71.51, 71.53, 71.55, 71.57, 71.59, 71.61, 71.63, 71.64, 71.65, 71.70, 71.71, 71.73, 71.74, 71.75, 71.77, 71.81, 71.83, 71.85(a), 71.85(b), 71.85(c), 71.87(g), 71.88, 71.91(a)(5), 71.91(a)(7), 71.91(b), 71.95, 71.97, 71.99, 71.100, 71.101(c)(2), 71.101(d), 71.101(e), 71.107, 71.109, 71.111, 71.113, 71.115, 71.117, 71.119, 71.121, 71.123, and 71.125.

(c) The terms "Close reflection by water," "Critical Safety Index," "Containment System," "Deuterium," "Fissile material," "Graphite," "Maximum normal operating pressure," "Optimum interspersed hydrogenous moderation," "Special Form," "Spent nuclear fuel" or

"Spent fuel," "State," "Depleted uranium," and "Enriched uranium" as defined in 10 CFR § 71.4 as of January 1, 2017 are excluded from these rules and are not incorporated by reference.

(d) Any references in the federal rules adopted by reference to the United States Nuclear Regulatory Commission (NRC), or any component thereof, shall be deemed to be a reference to the Department and the Uranium Recovery Program, except when used in 10 C.F.R. §§ 71.5(b) and 71.10.

(e) Any references in the federal rules adopted by reference to the Commission's "Form 3," and as referenced in 10 C.F.R. §§ 71.9(e)(1) and 17.9 (e)(2), shall be deemed to be a reference to the Department's "Uranium Recovery Program Form 3".

(f) If, for any reason, the U.S. Department of Transportation's regulations are not applicable to a shipment of licensed material, the licensee shall conform to the standards and requirements of 49 CFR Parts 170 through 189 appropriate to the mode of transport to the same extent as if the shipment was subject to these regulations.

(g) A request for modification, waiver, or exemption from the requirements in 49 C.F.R. Parts 170 through 189, and any notification referred to in those requirements, must be filed with, or made to, the Department.

Appendix B to Subsection 4.2
Compatibility Tables

Department of Environmental Quality

WYOMING

10 CFR PART 19

Please Note: The brackets "[ ]" around a compatibility category designation means that the Section may have been adopted elsewhere in a State rule, and it is not necessary to adopt it again. IBR means Incorporation by Reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Not Was a Comment Generated?
§19.1	Purpose	Ch. 5. Sec. 1	D	YES	NO	Compatibility D, adjusted for use by the State.
§19.2	Scope	Ch. 5, Sec. 2	D	YES	NO	Compatibility D, adjusted for use by the State.
§19.3	Definitions	Ch. 1, Sec. 5				
§19.3	Act	Ch. 1, Sec. 5(b)	D	YES	NO	Compatibility D, refers to the Environmental Quality Act not the Atomic Energy Act
§19.3	Commission	Ch. 1, Sec. 5(x)	D	YES	NO	Added language to make NRC an equivalent term.
§19.3	Exclusion	N/A	D	YES	NO	Compatibility D, not included in State Regulations.
§19.3	License	Ch. 1, Sec. 5(br)	[D]	YES	NO	Compatibility D, adjusted for use by the State.
§19.3	Licensee	Ch. 1, Sec.5(bs)	[D]	YES	NO	Compatibility D, adjusted for use by the State.
§19.3	Regulated activities	N/A	D	YES	NO	Compatibility D, not included in State regulations.
§19.3	Regulated entities	N/A	D	YES`	NO	Compatibility D, not included in State regulations.
§19.3	Restricted area	Ch. 1, Sec. 5(dc)	[A]	NO		

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Not Was a Comment Generated?
§19.3	Sequestration	N/A	D	YES	NO	Compatibility D, not included in State regulations.
§19.3	Worker	Ch. 1, Sec. 5(ee)	C	YES	YES	Changed to meet State needs. “Worker” means an individual engaged in work under a license issued by the Department and controlled by a licensee, but does not include the licensee.
§19.4	Interpretations	Ch. 5, Sec. 3(a)	D	NO		Incorporated by reference.
§19.5	Communications	N/A	D	YES	YES	Not Included, Compatibility D.
§19.8	Information collection requirement: OMB approval	N/A	D	YES	NO	Not Included, Compatibility D.
§19.11	Posting of notices to workers	Ch. 5, Sec. 3(a)	C	NO		Incorporated by reference.
§19.12	Instructions to workers	Ch. 5, Sec. 3(a)	C	NO		Incorporated by reference.
§19.13	Notification and reports to individuals	Ch. 5, Sec. 3(a)	C	NO		Incorporated by reference.
§19.14(a)	Presence of representatives of licensees and	Ch. 5, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Not Was a Comment Generated?
	workers during inspections					
§19.14(b)-(g)	Presence of representatives of licensees and workers during inspections	Ch. 5, Sec. 3(a)	C	NO		Incorporated by reference.
§19.15	Consultation with workers during inspections	Ch. 5, Sec. 3(a)	C	NO		Incorporated by reference.
§19.16	Requests by workers for inspections	Ch. 5, Sec. 3(a)	C	NO		Incorporated by reference.
§19.17	Inspection not warranted; informal review	Ch. 5, Sec. 3(a)	C	NO		Incorporated by reference.
§19.18	Sequestration of witnesses and exclusion of counsel in interviews conducted under subpoena	Ch. 5, Sec. 3(b)	D	YES	NO	State would follow protocol already established. Not necessary for compatibility, excluded from State regulations.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Not Was a Comment Generated?
§19.20	Employee Protection	Ch. 5, Sec. 3(a)	D	NO		Incorporated by reference.
§19.30	Violations	Ch. 5, Sec. 3(a)	D	NO		Incorporated by reference.
§19.31	Application for exemptions	Ch. 5, Sec. 3(a)	D	NO		Incorporated by reference.
§19.32	Discrimination prohibited	Ch. 5, Sec. 3(a)	D	NO		Incorporated by reference.
§19.40	Criminal penalties	Ch. 5, Sec. 3(a)	D	NO		Incorporated by reference.

10 CFR PART 20

Please Note: The brackets "[ ]" around a compatibility category designation means that the Section may have been adopted elsewhere in a State rule, and it is not necessary to adopt it again. IBR means Incorporation by Reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§20.1001	Purpose	Ch. 3, Sec. 1	D	YES	NO	Compatibility D, adjusted for use by the State. §20.1001
§20.1002	Scope	Ch. 3, Sec. 2	D	YES	NO	Compatibility D, adjusted for use by the State. §20.1002
§20.1003	Definitions	Ch. 1, Sec. 5				
§20.1003	Absorbed Dose	Ch. 1, Sec. 5(a)	A	NO		
§20.1003	Accelerator-produced radioactive material	N/A	H&S	YES	YES	This definition was not included. It does not pertain to the scope of authority Wyoming is seeking.
§20.1003	Act	Ch. 1, Sec. 5(b)	D	YES	YES	Compatibility D, adjusted for use by the State. "Act" refers to the Wyoming Environmental Quality Act. When referring to the Atomic Energy Act, the full reference will be written out.
§20.1003	Activity	Ch. 1, Sec. 5(d)	A	NO		
§20.1003	Adult	Ch. 1, Sec. 5(e)	A	NO		
§20.1003	Airborne Radioactive Material	Ch. 1, Sec. 5(g)	A	NO		

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§20.1003	Airborne Radioactivity Area	Ch. 1, Sec. 5(h)	A	NO		
§20.1003	Air-Purifying Respirator	Ch. 1, Sec. 5(i)	B	NO		
§20.1003	As Low As Reasonably Achievable (ALARA)	Ch. 1, Sec. 5(m)	A	NO		
§20.1003	Annual Limit on Intake (ALI)	Ch. 1, Sec. 5(l)	A	NO		
§20.1003	Assigned Protection Factor (APF)	Ch. 1, Sec. 5(n)	B	NO		
§20.1003	Atmosphere-Supplying Respirator	Ch. 1, Sec. 5(o)	B	NO		
§20.1003	Background Radiation	Ch. 1, Sec. 5(p)	A	YES	NO	Format is different. Rather than stating that "Background radiation" does not include "radiation from source, byproduct, or special nuclear materials regulated by the Commission", the phrase "radioactive materials regulated by the NRC or agreement state" is used instead.
§20.1003	Bioassay (radiobioassay)	Ch. 1, Sec. 5(r)	A	YES	NO	It is noted that this term is equivalent to "radiobioassay".
§20.1003	Byproduct material	Ch. 1, Sec. 5(s)	H&S	YES	YES	Only the definition related to the scope of authority that the State is seeking was included in the definition. Further clarification of the definition

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
						was added by referencing the definition in section 11e.(2) of the AEA.
§20.1003	Class (or lung class or inhalation class)	Ch. 1, Sec. 5(u)	A	NO		
§20.1003	Collective Dose	Ch. 1, Sec. 5(v)	A	NO		
§20.1003	Commission	Ch. 1, Sec. 5(x)	D	YES	NO	Added language to make NRC an equivalent term.
§20.1003	Committed Dose Equivalent ($H_{T,50}$)	Ch. 1, Sec. 5(y)	A	NO		
§20.1003	Committed Effective Dose Equivalent ($H_{E,50}$)	Ch. 1, Sec. 5(z)	A	NO		
§20.1003	Constraint (dose constraint)	Ch. 1, Sec. 5(aa)	C	NO		
§20.1003	Controlled Area	Ch. 1, Sec. 5(ad)	D	NO		
§20.1003	Critical Group	Ch. 1, Sec. 5(ae)	B	NO		
§20.1003	Declared Pregnant Woman	Ch. 1, Sec. 5(ag)	A	NO		
§20.1003	Decommission	Ch. 1, Sec. 5(ah)	[C]	NO		

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§20.1003	Deep-Dose Equivalent (H_d)	Ch. 1, Sec. 5(ai)	A	NO		
§20.1003	Demand Respirator	Ch. 1, Sec. 5(aj)	B	NO		
§20.1003	Department	Ch. 1, Sec. 5(ak)	D	YES	NO	Compatibility D, adjusted for use by the State. "Department" refers to the Wyoming Department of Environmental Quality.
§20.1003	Derived Air Concentration (DAC)	Ch. 1, Sec. 5(al)	A	NO		
§20.1003	Derived Air Concentration-Hour (DAC-hour)	Ch. 1, Sec. 5(am)	A	NO		
§20.1003	Disposable Respirator	Ch. 1, Sec. 5(ap)	B	NO		
§20.1003	Distinguishable from Background	Ch. 1, Sec. 5(aq)	B	NO		
§20.1003	Dose or Radiation Dose	Ch. 1, Sec. 5(ar)	D	NO		
§20.1003	Dose Equivalent (H_T)	Ch. 1, Sec. 5(as)	A	NO		
§20.1003	Dosimetry Processor	Ch. 1, Sec. 5(au)	D	NO		

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§20.1003	Effective Dose Equivalent (H_E)	Ch. 1, Sec. 5(av)	A	NO		
§20.1003	Embryo/Fetus	Ch. 1, Sec. 5(aw)	A	NO		
§20.1003	Entrance or Access Point	Ch. 1, Sec. 5(ax)	C	NO		
§20.1003	Exposure	Ch. 1, Sec. 5(ba)	D	NO		
§20.1003	External Dose	Ch. 1, Sec. 5(bc)	D	NO		
§20.1003	Extremity	Ch. 1, Sec. 5(bd)	A	NO		
§20.1003	Filtering Facepiece (dusk mask)	Ch. 1, Sec. 5(bf)	B	NO		
§20.1003	Fit Factor	Ch. 1, Sec. 5(bg)	B	NO		
§20.1003	Fit Test	Ch. 1, Sec. 5(bh)	B	NO		
§20.1003	Generally Applicable Environmental Radiation Standards	Ch. 1, Sec. 5(bi)	A- States with authority to regulate	NO		

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
			uranium mill activities (11e.(2) byproduct material) D- States without authority			
§20.1003	Government Agency	N/A	D	N/A		Compatibility D, not included in State Regulations.
§20.1003	Gray	Ch. 1, Sec. 7(b)(i)	A	NO		
§20.1003	Helmet	Ch. 1, Sec. 5(bj)	B	NO		
§20.1003	High Radiation Area	Ch. 1, Sec. 5(bk)	A	NO		
§20.1003	Hood	Ch. 1, Sec. 5(bl)	B	NO		
§20.1003	Individual	Ch. 1, Sec. 5(bm)	A	NO		
§20.1003	Individual Monitoring	Ch. 1, Sec. 5(bn)	A	YES	NO	Same content, organized differently.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§20.1003	Individual Monitoring Devices	Ch. 1, Sec. 5(bo)	C	YES	NO	Our definition stated that personnel monitoring equipment is an equivalent term, and the information is rearranged slightly.
§20.1003	Internal Dose	Ch. 1, Sec. 5(bp)	A	NO		
§20.1003	Lens Dose Equivalent (LDE)	Ch. 1, Sec. 5(bq)	A	NO		
§20.1003	License	Ch. 1, Sec. 5(br)	D	YES	NO	Compatibility D, adjusted for use by the State.
§20.1003	Licensed Material	Ch. 1, Sec. 5(bt)	D	YES	NO	Compatibility D, adjusted for use by the State.
§20.1003	Licensee	Ch. 1, Sec. 5(bs)	D	YES	NO	Compatibility D, adjusted for use by the State.
§20.1003	Limits (dose limits)	Ch. 1, Sec. 5(bu)	A	NO		
§20.1003	Loose-Fitting Facepiece	Ch. 1, Sec. 5(bv)	B	NO		
§20.1003	Lost or Missing Licensed Material	Ch. 1, Sec. 5(bw)	B	NO		
§20.1003	Member of the Public	Ch. 1, Sec. 5(by)	A	NO		

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§20.1003	Minor	Ch. 1, Sec. 5(bz)	A	NO		
§20.1003	Monitoring	Ch. 1, Sec. 5(ca)	A	NO		
§20.1003	Nationally Tracked Source	N/A	B	YES	YES	Excluded from regulations, as it is not part of the authority Wyoming is seeking. The materials we are seeking are not part of the Nationally-tracked source program.
§20.1003	Negative Pressure Respirator (tight fitting)	Ch. 1, Sec. 5(cd)	B	NO		
§20.1003	Nonstochastic Effect[i]	Ch. 1, Sec. 5(ce)	A	NO		
§20.1003	NRC	Ch. 1, Sec. 5(x)	D	YES	NO	Compatibility D, not required for the State to adopt.
§20.1003	Occupational Dose	Ch. 1, Sec. 5(cf)	A	NO		
§20.1003	Particle Accelerator	N/A	H&S	YES	YES	This definition is not applicable to the scope of authority that Wyoming is seeking, therefore the definition is not included.
§20.1003	Person	Ch. 1, Sec. 5(ch)	[C]	YES	NO	Adjusted for use by the State. Changes did not alter the intent of the definition.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§20.1003	Planned Special Exposure	N/A	D	YES	NO	Compatibility D, not included in State regulations.
§20.1003	Positive Pressure Respirator	Ch. 1, Sec. 5(cj)	B	NO		
§20.1003	Powered Air-Purifying Respirator (PAPR)	Ch. 1, Sec. 5(ck)	B	NO		
§20.1003	Pressure Demand Respirator	Ch. 1, Sec. 5(cl)	B	NO		
§20.1003	Public Dose	Ch. 1, Sec. 5(co)	A	NO		
§20.1003	Qualitative Fit Test (QLFT)	Ch. 1, Sec. 5(cp)	B	NO		
§20.1003	Quality Factor (Q)	Ch. 1, Sec. 5(cq)	A	NO		
§20.1003	Quantitative Fit Test (QNFT)	Ch. 1, Sec. 5(cr)	B	NO		
§20.1003	Quarter	Ch. 1, Sec. 5(cs)	D	NO		
§20.1003 & §20.1004	Rad	Ch. 1, Sec. 7(b)(ii)	A	NO		
§20.1003	Radiation	Ch. 1, Sec. 5(ct)	A	NO		

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§20.1003	Radiation Area	Ch. 1, Sec. 5(cu)	A	NO		
§20.1003	Reference Man	Ch. 1, Sec. 5(cy)	A	NO		
§20.1003 & §20.1004	Rem	Ch. 1, Sec. 7(b)(iii)	A	NO		
§20.1003	Residual Radioactivity	Ch. 1, Sec. 5(da)	B	YES	NO	A phrase was added referencing Ch. 3 of State regulations.
§20.1003	Respiratory Protective Device	Ch. 1, Sec. 5(db)	C	NO		
§20.1003	Restricted Area	Ch. 1, Sec. 5(dc)	A	NO		
§20.1003	Sanitary Sewerage	Ch. 1, Sec. 5(de)	A	NO		
§20.1003	Self-Contained Breathing Apparatus (SCBA)	Ch. 1, Sec. 5(df)	B	NO		
§20.1003	Shallow-Dose Equivalent (H_S)	Ch. 1, Sec. 5(dg)	A	NO		
§20.1003	Site Boundary	Ch. 1, Sec. 5(dj)	D	NO		
§20.1003	Source Material	Ch. 1, Sec. 5(dk)	[A]	YES	NO	Used definition in §40.4, slightly different.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§20.1003	Special Nuclear Material	Ch. 1, Sec. 5(dm)	[A]	NO		
§20.1003	Stochastic Effects[ii]	Ch. 1, Sec. 5(dn)	A	NO		
§20.1003	Supplied-Air Respirator (SAR) or Airline Respirator	Ch. 1, Sec. 5(do)	B	NO		
§20.1003	Survey	Ch. 1, Sec. 5(dp)	A	NO		
§20.1003	Tight-Fitting Facepiece	Ch. 1, Sec. 5(dr)	B	NO		
§20.1003	Total Effective Dose Equivalent (TEDE)	Ch. 1, Sec. 5(ds)	A	NO		
§20.1003	Unrestricted Area	Ch. 1, Sec. 5(du)	A	YES	NO	The definition is the same, except that Wyoming states that “uncontrolled area” is an equivalent term.
§20.1003	Uranium Fuel Cycle	Ch. 1, Sec. 5(dw)	D	NO		
§20.1003	User Seal Check (fit check)	Ch. 1, Sec. 5(dy)	B	NO		

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§20.1003	Very High Radiation Area	Ch. 1, Sec. 5(dz)	A	NO		
§20.1003	Waste	Ch. 1, Sec. 5(ea)	B	YES	NO	The reference at the end of the definition changed to reflect the State's jurisdiction solely over 11e.(2) byproduct material.
§20.1003	Week	Ch. 1, Sec. 5(eb)	D	NO		
§20.1003	Weighting Factor	Ch. 1, Sec. 5(ec)	A	NO		
§20.1003	Whole Body	Ch. 1, Sec. 5(ed)	A	NO		
§20.1003	Working level (WL)	Ch. 1, Sec. 5(ef)	A	YES	NO	The definition is the same, the wording is in a different order.
§20.1003	Working level month (WLM)	Ch. 1, Sec. 5(eg)	A	NO		
§20.1003	Year	Ch. 1, Sec. 5(eh)	A	NO		
§20.1004	Units of radiation dose	Ch. 1, Sec. 7; Ch. 3, Sec 4(a)	A	YES	NO	Table 1004(b).2 is Incorporated by reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§20.1005	Units of radioactivity	Ch. 1, Sec. 8; Ch. 1 Secs. 5(q) and 5(af), Ch. 3, Sec. 4(b)	A	YES	NO	Formatting is differenct the definition Curie and becquerel are defined in the definitions.
§20.1006	Interpretations	Ch. 3, Sec. 4(b)	D	YES	NO	Compatibility D, not included in State regulations.
§20.1007	Communications	Ch. 1, Sec. 9	D	YES	NO	Compatibility D, adjusted to fit State needs.
§20.1008	Implementation	Ch. 3, Sec. 4(b)	D	YES	NO	Compatibility D, not included in State regulations.
§20.1009	Information collection requirements: OMB approval	Ch. 3, Sec. 4(b)	D	YES	NO	Compatibility D, not included in State regulations.
§20.1101	Radiation protection programs	Ch. 3, Sec. 4(a)	H&S	NO		Incorporation by reference.
§20.1101(d)	Radiation protection programs	Ch. 3, Sec. 4(a)	C	NO		Incorporation by reference.
§20.1201	Occupational dose limits for adults	Ch. 3, Sec. 4(a)	A	NO		Incorporation by reference.
§20.1202	Compliance with requirements for summation of external and internal doses	Ch. 3, Sec. 4(a)	A	NO		Incorporation by reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§20.1203	Determination of external dose from airborne radioactive material	Ch. 3, Sec. 4(a)	A	NO		Incorporation by reference.
§20.1204	Determination of internal exposure	Ch 3, Sec 4(a)	A	NO		Incorporation by reference.
§20.1205	Reserved	N/A				
§20.1206	Planned special exposures	Ch. 3 Sec. 4(b)	D	NO		Compatibility D, Excluded from State regulations.
§20.1207	Occupation dose limits for minors	Ch. 3, Sec. 4(a)	A	NO		Incorporation by reference.
§20.1208	Dose equivalent to an embryo/fetus	Ch. 3, Sec. 4(a)	A	NO		Incorporation by reference.
§20.1301 (a),(b), & (c)	Dose limits for individual members of the public	Ch. 3, Secs. 4(a) & 4(b)	A	YES	YES	§20.1301(c) is excluded because the State is not seeking authority over licensed materials in hospitals.
§20.1301(d)	Dose limits for individual members of the public	Ch. 3, Sec. 4(a)	C	NO		Incorporation by reference.
§20.1301(e)	Dose limits for individual members of the public	Ch. 3, Sec. 4(a)	A for States with authority to regulate U-mill activities	NO		Incorporation by reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
			D for States without authority			
§20.1301(f)	Dose limits for individual members of the public	Ch. 3, Sec. 4(a)	D	NO		Incorporation by reference.
§20.1302 (a) & (b)	Compliance with dose limits for individual members of the public	Ch. 3, Sec. 4(a)	H&S	NO		Incorporation by reference.
§20.1302(c)	Compliance with dose limits for individual members of the public	Ch. 3, Sec. 4(a)	D	NO		Incorporation by reference.
§20.1401	General provisions and scope	Ch. 3, Sec. 4(b)	C	YES	NO	Subpart E of 10 CFR Part 20 excludes Uranium Recovery Operations, and therefore per NRC request references to Subpart E have been removed.
§20.1402	Radiological criteria for unrestricted use	Ch. 3, Sec. 4(b)	C	YES	NO	Subpart E of 10 CFR Part 20 excludes Uranium Recovery Operations, and therefore per NRC request references to Subpart E have been removed.
§20.1403	Criteria for license termination under restricted conditions	Ch. 3, Sec. 4(b)	C	YES	NO	Subpart E of 10 CFR Part 20 excludes Uranium Recovery Operations, and therefore per NRC

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
						request references to Subpart E have been removed.
§20.1404	Alternate criteria for license termination	Ch. 3, Sec. 4(b)	C	YES	NO	Subpart E of 10 CFR Part 20 excludes Uranium Recovery Operations, and therefore per NRC request references to Subpart E have been removed.
§20.1405	Public notification and public participation	Ch. 3, Sec. 4(b)	C	YES	NO	Subpart E of 10 CFR Part 20 excludes Uranium Recovery Operations, and therefore per NRC request references to Subpart E have been removed.
§20.1406(a)	Minimization of contamination	Ch. 3, Sec. 4(b)	C	YES	NO	Subpart E of 10 CFR Part 20 excludes Uranium Recovery Operations, and therefore per NRC request references to Subpart E have been removed.
§20.1406(b)	Minimization of contamination	Ch. 3, Sec. 4(b)	NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.
§20.1501	General	Ch. 3, Sec. 4(a)	H&S	NO		Incorporation by reference.
§20.1502	Conditions requiring individual monitoring of external and internal occupational dose	Ch. 3, Sec. 4(a)	H&S	NO		Incorporation by reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§20.1601	Control of access to high radiation areas	Ch. 3, Secs. 4(a) & 4(b)	H&S	YES	YES	§20.1601(f) excluded because the State is not seeking authority over licensed material in hospitals.
§20.1602	Control of access to very high radiation areas	Ch. 3, Sec. 4(a)	H&S	NO		Incorporation by reference.
§20.1701	Use of process or other engineering controls	Ch. 3, Sec. 4(a)	H&S	NO		Incorporation by reference.
§20.1702	Use of other controls	Ch. 3, Sec. 4(a)	H&S	NO		Incorporation by reference.
§20.1703	Use of individual respiratory protection equipment	Ch. 3, Sec. 4(a)	H&S	NO		Incorporation by reference.
§20.1704	Further restrictions on the use of respiratory protection equipment	Ch. 3, Sec. 4(a)	D	NO		Incorporation by reference.
§20.1705	Application for use of higher assigned protection factors	Ch. 3, Sec. 4(a)	B	NO		Incorporation by reference.
§20.1801	Security of stored material	Ch. 3, Sec. 4(a)	H&S	NO		Incorporation by reference.
§20.1802	Control of material not in storage	Ch. 3, Sec. 4(a)	H&S	NO		Incorporation by reference.
§20.1901	Caution signs	Ch. 3, Sec. 4(a)	A	NO		Incorporation by reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§20.1902	Posting requirements	Ch. 3, Sec. 4(a)	A	NO		Incorporation by reference.
§20.1903	Exceptions to posting requirements	Ch. 3, Secs. 4(a) and 4(b)	D	YES	YES	§20.1903(b) and §20.1903(d) excluded. The State is not seeking authority over licensed material in hospitals.
§20.1904	Labeling containers	Ch. 3, Sec. 4(a)	A	NO		Incorporation by reference.
§20.1905 (a) – (f)	Exceptions to labeling requirements	Ch. 3, Sec. 4(a)	A	NO		Incorporation by reference.
§20.1905(g)	Exceptions to labeling requirements	Ch. 3, Sec. 4(b)	NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.
§20.1906	Procedures for receiving and opening packages	Ch. 3, Sec. 4(a)	H&S	NO		Incorporation by reference.
§20.2001	General requirements (Waste Disposal)	Ch. 3, Sec. 4(a)	C	NO		Incorporation by reference.
§20.2002	Method for obtaining approval of proposed disposal procedures	Ch. 3, Sec. 4(a)	D	N/A		Incorporation by reference.
§20.2003 (a)(1)	Disposal by release into sanitary sewerage	Ch. 3, Sec. 4(a)	H&S	NO		Incorporation by reference.
§20.2003	Disposal by release into sanitary sewerage	Ch. 3, Sec. 4(a)	A	NO		Incorporation by reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
(a)(2)&(a)(3)						
§20.2003 (a)(4)	Disposal by release into sanitary sewerage	Ch. 3, Sec. 4(a)	C	NO		Incorporation by reference.
§20.2003 (b)	Disposal by release into sanitary sewerage	Ch. 3, Sec 4(b)	D	YES	NO	Excluded, involves material excreted from patients ingesting radioactive materials. Not part of the agreement WY is seeking.
§20.2004	Treatment or disposal by incineration	Ch. 3, Sec. 4(a)	D	NO		Incorporation by reference.
§20.2005	Disposal of specific wastes	Ch. 3, Sec. 4(a)	D	NO		Incorporation by reference.
§20.2006	Transfer for disposal and manifests	Ch. 3, Sec. 4(a)	B	NO		Incorporation by reference.
§20.2007	Compliance with environmental and health protection regulations	Ch. 3, Sec. 4(a)	D	NO		Incorporation by reference.
§20.2008	Disposal of certain byproduct material	Ch. 3, Sec. 4(a)	B	NO		Incorporation by reference.
§20.2101	General provisions	Ch. 3, Sec. 4(a)	C	NO		Incorporation by reference.
§20.2102	Records of radiation protection programs	Ch. 3, Sec. 4(a)	D	NO		Incorporation by reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§20.2103	Records of surveys	Ch. 3, Sec 4(a)	D	NO		Incorporation by reference.
§20.2104	Determination of prior occupational dose	Ch. 3, Secs. 4(a) & 4(b)	H&S-for States who adopt "planned special exposure" D-for those who do not	YES	YES	For §20.2104(b) WY should have no need to have a planned special exposure provision.
§20.2105	Records of planned special exposures	Ch. 3, Sec 4(b)	D	YES	NO	Excluded, WY should have no need to have a planned special exposure provision.
§20.2106 (a) & (e)	Records of individual monitoring results	Ch. 3, Sec. 4(a)	C	NO		Incorporation by reference.
§20.2106 (b),(c),(d), & (f)	Records of individual monitoring results	Ch. 3, Sec. 4(a)	D	NO		Incorporation by reference.
§20.2107	Records of Dose to individual members of the Public	Ch. 3, Sec. 4(a)	D	NO		Incorporation by reference.
§20.2108	Records of Waste Disposal	Ch. 3, Sec. 4(a)	D	NO		Incorporation by reference.
§20.2110	Form of Records	Ch. 3, Sec. 4(a)	D	NO		Incorporation by reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§20.2201 (a),(b),(d), & (e)	Reports of theft or loss of licensed material	Ch. 3, Sec. 4(a)	C	NO		Incorporation by reference.
§20.2201(c)	Reports of theft or loss of licensed material	Ch. 3, Sec. 4(a)	D	NO		Incorporation by reference.
§20.2202 (a),(b),(c), & (d)	Notification of Incidents	Ch. 3, Sec. 4(a)	C	NO		Incorporation by reference.
§20.2202(e)	Notification of Incidents	Ch. 3, Sec. 4(a)	D	NO		Incorporation by reference.
§20.2203 (a) & (b)	Reports of exposures, etc., exceeding the limits	Ch. 3, Sec. 4(a)	C	NO		Incorporation by reference.
§20.2203(c)	Reports of exposures, etc., exceeding the limits	Ch. 3, Sec 4(b)	NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.
§20.2203(d)	Reports of exposures, etc., exceeding the limits.	Ch. 3, Sec 4(a)	D	NO		Incorporation by reference.
§20.2204	Reports of Planned special exposures	Ch. 3, Sec 4(b)	H&S-for States who adopt “planned special exposure”	YES	YES	Excluded, WY should have no need to have a planned special exposure provision.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
			D-for those who do not			
§20.2205	Reports to individuals of exceeding dose limits	Ch. 3, Sec. 4(a)	C	NO		Incorporation by reference.
§20.2206 (a)(1), (a)(3), (a)(4), & (a)(5)	Reports of Individuals Monitoring	Ch. 3, Sec 4(b)	NRC			NRC Compatibility excluded from State regulations to maintain NRC jurisdiction.
§20.2206 (a)(2), (a)(6), (a)(7), (b), & (c)	Reports of Individuals Monitoring	Ch. 3, Sec. 4(a)	D	N/A		Incorporation by reference.
§20.2207	Reports of transactions involving nationally tracked sources	Ch. 3, Sec 4(a)	B	NO		Incorporation by reference.
§20.2301	Applications for Exemptions	Ch. 3, Sec. 4(a)	D	N/A		Incorporation by reference.
§20.2302	Additional Requirements	Ch. 3, Sec. 4(a)	D	N/A		Incorporation by reference.
§20.2401	Violations	Ch. 3, Sec 4(b)	D	YES	NO	Compatibility D, excluded from State regulations.
§20.2402	Criminal Penalties	Ch. 3, Sec. 4(b)	D	YES	NO	Compatibility D, excluded from State regulations.
Appendix A	Assigned Protection Factors for Respirators	Ch. 3, Sec. 4(a)	B	NO		Incorporation by reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
Appendix B (Tables 1,2, & 3)	Annual Limits on Intake (ALIs) and Derived Air Concentrations (DACs), of Radionuclides for Occupational Exposure; Effluent Concentrations; Concentrations for Release to Sewerage	Ch. 3, Sec. 4(a)	A	NO		Incorporation by reference.
Appendix C	Quantities of licensed materials requiring labeling	Ch. 3, Sec. 4(a)	A	NO		Incorporation by reference.
Appendix D	United States Nuclear Regulatory Commission Regional Offices	Ch. 3, Sec. 4(b)	D	YES	NO	Compatibility D, excluded from State regulations.
Appendix E	Nationally tracked source thresholds	Ch. 3, Sec. 4(a)	B	NO		Incorporation by reference.
Appendix F	Reserved					Excluded
Appendix G	Requirements for Low-level radioactive waste intended for disposal at land disposal facilities and manifests	Ch. 3, Sec. 4(a)	B	NO		Incorporation by reference.
Appendix G	Requirements for Low-level radioactive waste	Ch. 3, Sec. 4(a)	D	NO		Incorporation by reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
Forms 540, 540A, 541, 541A, 542, & 542A	intended for disposal at land disposal facilities and manifests					

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Please Note: The brackets "[ ]" around a compatibility category designation means that the Section may have been adopted elsewhere in a State rule, and it is not necessary to adopt it again. IBR means Incorporation by Reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§40.1	Purpose	Ch. 4, Sec. 1	D	YES	NO	Compatibility D, adjusted for use by the State.
§40.2	Scope	Ch. 4, Sec. 2	D	YES	NO	Compatibility D, adjusted for use by the State.
§40.2a	Coverage of inactive tailings sites	Ch. 4, Sec. 3(a)	A- States with authority to regulate uranium mill activities (11e.(2) byproduct material)	NO	NO	Incorporation by reference.
§40.3	License requirements	Ch. 4, Sec. 2(b)	C	YES	NO	Slight difference in wording, references Ch. 1 of State regulations.
§40.4	Definitions	Ch. 1, Sec. 5				

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§40.4	Act	Ch. 1, Sec. 5(b)	D	YES	YES	Compatibility D, Adjusted for use by the State. “Act” refers to the Wyoming Environmental Quality Act. When referring to the Atomic Energy Act the full reference will be written out.
§40.4	Agreement State	Ch. 1, Sec. 5(f)	B	YES	NO	“The Act” is replaced with "Atomic Energy Act of 1954, as amended".
§40.4	Alert	Ch. 1, Sec. 5(j)	[A]	NO		
§40.4	Byproduct material	Ch. 1, Sec. 5(s)	H&S	YES	YES	Only the definition related to the scope of authority that the State is seeking was included in the definition. Further clarification of the definition was added by referencing the definition in section 11e.(2) of the AEA
§40.4	Commencement of construction Paragraph 1	Ch. 1, Sec. 5(w)	C for States authority to regulate uranium mill activities (11e.(2))	NO		
§40.4	Commencement of construction Paragraph 2	N/A	NRC	YES	NO	NRC Compatibility. excluded from State regulations to maintain NRC jurisdiction.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§40.4	Commission	Ch. 1, Sec. 5(x)	D	YES	NO	Added language to make "NRC" an equivalent term.
§40.4	Construction Paragraph 1-8, 9i	Ch. 1, Sec. 5(ab)	C for States authority to regulate uranium mill activities (11e.(2))	NO		
§40.4	Construction, Paragraph 9ii "common defense and security"	N/A	NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.
§40.4	Corporation	N/A	D	YES	NO	Compatibility D, not included in State regulations.
§40.4	Decommission	Ch. 1, Sec. 5(ah)	[C]	No		
§40.4	Department of Energy	N/A	[D]	YES	NO	Compatibility D, not included in State Regulations.
§40.4	Depleted uranium	N/A	A	YES	YES	Depleted Uranium is outside the scope of material the State is assuming.
§40.4	Effective kilogram	N/A	D	YES	NO	Compatibility D, not included in State regulations.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§40.4	Foreign obligations	N/A	NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.
§40.4	Government agency	N/A	D	YES	NO	Compatibility D, not included in State Regulations.
§40.4	License	Ch. 1, Sec. 5(br)	[D]	YES	NO	Compatibility D, adjusted for use by the State.
§40.4	Persons	Ch. 1, Sec. 5(ch)	[C]	YES	NO	Adjusted for use by the State as “Person”. Changes did not alter the intent of the definition.
§40.4	Pharmacist	N/A	[D]	YES	NO	Compatibility D, not included in State Regulations.
§40.4	Physician	Ch. 1, Sec. 5(ci)	[D]	NO		
§40.4	Principal activities	Ch. 1, Sec. 5(cm)	[D]	NO		
§40.4	Reconciliation	N/A	NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.
§40.4	Residual Radioactive Material	Ch. 1, Sec. 5(cz)	A- States with authority to regulate uranium mill activities	NO		

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
			(11e.(2) byproduct material)			
§40.4	Site Area Emergency	Ch. 1, Sec. 5(di)	[A]	NO		
§40.4	Source Material	Ch. 1, Sec. 5(dk)	[A]	NO		
§40.4	Special Nuclear Material	Ch. 1, Sec. 5(dm)	A	NO		
§40.4	Transient shipment	N/A	[D]	YES	NO	Compatibility D, not included in State Regulations.
§40.4	United States	N/A	[D]	YES	NO	Compatibility D, not included in State Regulations.
§40.4	Unrefined and unprocessed ore	Ch. 1, Sec. 5(dt)	B	NO		
§40.4	Uranium enrichment facility	N/A	[D]	YES	NO	Compatibility D, not included in State Regulations.
§40.4	Uranium milling	Ch. 1, Sec. 5(dx)	A- States with authority to regulate uranium mill activities	YES	YES	The State refers to W.S. §35-11-103 rather than ”as defined in this part” (10 CFR 40.4).

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
			(11.e(2) byproduct material)			
§40.5	Communications	Ch. 4, Sec. 5	D	YES	NO	Compatibility D, adjusted for use by the State.
§40.6	Interpretations	N/A	D	YES	NO	Compatibility D, not included in State regulations.
§40.7	Employee protection	N/A	D	YES	NO	Compatibility D, not included in State regulations.
§40.8	Information collection requirements: OMB approval	N/A	D	YES	NO	Compatibility D, not included in State regulations.
§40.9	Completeness and accuracy of information	Ch. 4, Secs. 5(d) & 5(e)	D	YES	NO	Compatibility D. Language modified for use by the State.
§40.10	Deliberate misconduct	Ch. 4, Sec. 4	C	YES	YES	Different language, preserves important principles.
§40.11	Persons using source material under certain Department of Energy and	Ch. 4, Sec. 6(f)	B	YES	YES	Content is there but is formatted differently.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
	Nuclear Regulatory Commission contracts					
§40.12(a)	Carriers	Ch. 4, Sec. 6(e)	B	NO		
§40.12(b)	Carriers		NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.
§40.13 (a), (b), (c), & (d), except for (c)(5)(iv)	Unimportant quantities of source material	Ch. 4, Sec. 6(a)	B	YES	YES	40.13(c) is not included in the State's regulations as this type of material is not included in the scope of material Wyoming is seeking. Those exemptions would still be through the NRC
§40.13 (c)(5)(iv)	Unimportant quantities of source material	Ch. 4, Sec. 6(a)	NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.
§40.14	Specific exemptions	Ch. 4, Sec. 6(d)	D	YES	NO	Compatibility D, adjusted for State use.
§40.20(a)[iii]	Types of licenses	N/A	C	NO		Not incorporated. See ML17164A278.
§40.20 (b) & (c)	Types of licenses	N/A	D	NO		Not incorporated. See ML17164A278.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§40.21	General license to receive title to source or byproduct material	N/A	C	YES	YES	Not incorporated. See ML17164A278.
§40.22(a), (b)(1)-(3), & (b)(5)	Small quantities of source material	N/A	B	YES	YES	NRC will still manage small quanitities of source material. See ML17164A278.
§40.22(b)(4)	Small quantities of source material	N/A	D	YES	YES	NRC will still manage small quanitities of source material. See ML17164A278.
§40.22(c)	Small quantities of source material	N/A	C	YES	YES	NRC will still manage small quanitities of source material. See ML17164A278.
§40.22(d)	Small quantities of source material	N/A	B	YES	YES	NRC will still manage small quanitities of source material. See ML17164A278.
§40.22(e)	Small quantities of source material	N/A	B	YES	YES	NRC will still manage small quanitities of source material. See ML17164A278.
§40.23	General license for carriers of transient	N/A	NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
	shipments of natural uranium other than in the form of ore or ore residue					
§40.25	General license for use of certain industrial products or devices	N/A	C	YES	YES	Involves depleted uranium, which is outside the scope of material sought by the State.
§40.26	General license for possession and storage of byproduct material as defined in this part	N/A	C- States with authority to regulate uranium mill activities (11e.(2) byproduct material)	Yes	Yes	Not incorporated per ML17164A278.
§40.27	General license for custody and long-term care of residual radioactive material disposal sites	N/A	NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§40.28	General license for custody and long-term care of uranium or thorium byproduct materials disposal sites	N/A	NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.
§40.31 (a), (b), (c), (d), (e), (f), (g), & (h)	Application for specific licenses	Ch. 4, Secs. 8 and 9	D	YES	NO	Compatibility D, adjusted for State use.
§40.31(i)	Application for specific licenses	Ch. 6 & 10 CFR 40, App A (IBR)	H&S	YES	NO	Covers financial assurance obligations, (IBR of 10 CFR 40 APP A).
§40.31 (j), (k), (l), & (m)	Application for specific licenses	N/A	NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.
§40.32 (a) & (f)	General requirements for issuance of specific licenses	Ch. 4, Sec. 8	D	YES	NO	Compatibility D, adjusted for State use.
§40.32 (b), (c), and the portions of paragraph (e)	General requirements for issuance of specific licenses	Ch. 4, Secs. 8 & 9	H&S	YES	NO	Change in format, adjusted for State use.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
which apply to uranium mills for States with uranium mill authority						
§40.32 (d), (g), and those portions of paragraph (e) which apply to uranium enrichment and uranium hexafluoride facilities	General requirements for issuance of specific licenses	N/A	NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.
§40.33	Issuance of a license for a uranium enrichment facility	N/A	NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.
§40.34 (a)(1),(b), & (c)	Special requirements for issuance of specific licenses	N/A	D	YES	NO	State is not seeking authority for depleted uranium, industrial products, or devices.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§40.34 (a)(2)&(a)(3)	Special requirements for issuance of specific licenses	N/A	B	YES	YES	These items deal with depleted uranium, which is outside the scope of authority that Wyoming is seeking.
§40.35(a)	Conditions of specific licenses issued pursuant to §40.34	N/A	C	YES	YES	These items deal with depleted uranium, which is outside the scope of authority that Wyoming is seeking.
§40.35 (b) & (c)	Conditions of specific licenses issued pursuant to §40.34	N/A	B	YES	YES	These items deal with depleted uranium, which is outside the scope of authority that Wyoming is seeking.
§40.35 (d), (e), & (f)	Conditions of specific licenses issued pursuant to §40.34	N/A	D	YES	YES	These items deal with depleted uranium, which is outside the scope of authority that Wyoming is seeking.
§40.36 (a), (b), (d), & (f)	Financial assurance and recordkeeping for decommissioning	N/A	H&S	YES	YES	Financial Assurance requirements are set forth in 10 CFR Part 40 Appendix A, and §40.36 is not applicable to scope of material the State is seeking.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§40.36 (c), (e), & (g)	Financial assurance and recordkeeping for decommissioning	N/A	D	YES	YES	Financial Assurance requirements are set forth in 10 CFR Part 40 Appendix A, and §40.36 is not applicable to scope of material the State is seeking.
§40.38	Ineligibility of certain applicants	N/A	NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.
§40.41 (a),(b), & (c)	Terms and conditions of licenses	Ch. 4, Sec. 8	C	YES	NO	Wording different, but intent of the federal rules are captured in the State regulations.
§40.41 (d), (e)(1), (e)(3), (g), & (h)	Terms and conditions of licenses	N/A	NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.
§40.41 (e)(2) & (e)(4)	Terms and conditions of licenses	Ch. 4, Sec. 8(e)	D	YES	NO	Compatibility D, adjusted for State use.
§40.41(f)	Terms and conditions of licenses	Ch. 4, Sec. 8(h)	H&S	YES	NO	Adapted to fit State regulations.
§40.42 (a), (b), & (k)(4)	Expiration and termination of licenses and	Ch. 4, Secs. 11-14	D	YES	NO	Compatibility D, adapted to fit State Regulations.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
	decommissioning of sites and separate buildings or outdoor areas					
§40.42 (c), (d), (e), (f), (g), (h), (i),(j), (k)(1), (k)(2), (k)(3), & (l)	Expiration and termination of licenses and decommissioning of sites and separate buildings or outdoor areas	Ch. 4, Secs. 11(c), 16(a), 16(b), 16(i), & 17	H&S	YES	NO	Minor changes in language, principles are maintained in State Regulations.
§40.43	Renewal of licenses	Ch. 4, Sec. 12(a)	D	YES	NO	Compatibility D, adjusted for State use.
§40.44	Amendment of licenses at request of licensee	Ch. 4, Sec. 13	D	YES	NO	Compatibility D, adjusted for State use.
§40.45	Commission action on applications to renew or amend	Ch. 4, Sec. 13(a)	D	YES	NO	Compatibility D, adjusted for State use.
§40.46	Inalienability of licenses	Ch. 4, Sec. 8(e)	C	YES	YES	The Department determines the information that is needed for submittal during a transfer.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§40.51 (a),(b)(1)-(5), (b)(7), (c), & (d)	Transfer of source or byproduct material	Ch. 4, Sec. 3(a)	C	NO		Incorporation by reference.
§40.51(b)(6)	Transfer of source or byproduct material	Ch. 4, Sec 3(a)	NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.
§40.52	Certain items containing source material; requirements for license to apply or initially transfer	N/A	NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.
§40.53	Conditions for licenses issued for initial transfer of certain items containing source material: Quality control, labeling, and records and reports	N/A	NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.
§40.54	Requirements for license to initially	Ch. 4, Sec 3(a)	B	NO		Incorporation by reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
	transfer source material for use under the 'small quantities of source material' general license					
§40.55 (a), (b), (c), & (d)	Conditions of licenses to initially transfer source material for use under the 'small quantities of source material' general license: Quality control, labeling, safety instructions, and records and reports	Ch. 4, Sec 3(a)	B	NO		Incorporation by reference.
§40.55(e)	Conditions of licenses to initially transfer source material for use under the 'small quantities of source material'	Ch. 4, Sec 3(a)	C	NO		Incorporation by reference

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
	general license: Quality control, labeling, safety instructions, and records and reports					
§40.56	Restrictions on the use of Australian-obligated source materials	N/A	NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.
§40.60 (a),(b),(c)(1), & (2)	Reporting requirements	Ch. 4, Sec. 10	C	YES	NO	Formatted differently.
§40.60(c)(3)	Reporting requirements	N/A	D	YES	NO	Compatibility D, not included in State regulations.
§40.61(a) & (b)	Records	Ch. 4, Sec. 3(a)	C	NO		Incorporation by reference.
§40.61(c) & (f)	Records	Ch. 4, Sec. 3(a)	D	NO		Incorporation by reference.
§40.61(d) & (e)	Records	Ch. 4, Sec. 3(a)	H&S	NO		Incorporation by reference.
§40.62	Inspections	Ch. 2, Sec. 3(a)	D	YES	NO	Slightly modified for State use.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§40.63	Tests	Ch. 2, Sec. 3(b)	D	YES	NO	Compatibility D, Adjusted for State use.
§40.64	Reports	N/A	NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.
§40.65	Effluent monitoring reporting requirements	Ch. 4, Sec. 10(b)	C - States with authority to regulate uranium mill activities (11e.(2) byproduct material)	YES	NO	Modified language to fit State rules.
§40.66	Requirements for advance notice of export shipments of natural uranium	N/A	NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.
§40.67	Requirement for advance notice of importation of natural uranium from countries that are not party to the Convention on the Physical	N/A	NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
	Protection of Nuclear Material					
§40.71	Modification and revocation of licenses	Ch. 4, Sec. 14	D	YES	NO	Modified slightly for State use.
§40.81	Violations	N/A	D	YES	NO	Compatibility D, §40.81 not specifically included in State Regulations. Ch. 2, Sec. 4 provides State language for violations.
§40.82	Criminal penalties	N/A	D	YES	NO	Compatibility D, §40.82 not included in State regulations. Criminal remedies are addressed in Ch. 2, Sec. 4(d).
APPENDIX A to Part 40	Criteria Relating to the Operation of Uranium Mills and the Disposition of Tailings or Wastes Produced by the Extraction or Concentration of	Ch. 4, Sec. 3(a)	Definitions -A for States with authority to regulate uranium mill activities (11e.(2) byproduct material)	NO		Incorporation by reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
	Source Material From Ores Processed Primarily for Their Source Material Content		Criteria 11A. - F. and Criterion 12 are NRC. All of the remaining portions of the section are C-for States with authority to regulate uranium milling activities			
APPENDIX A	*Introduction*	Ch. 4, Section 3(a)	C	YES	NO	Language modified for State use.
APPENDIX A	*Aquifer*	Ch. 1, Sec. 6(a)	A	NO		
APPENDIX A	*As expeditiously as practicable considering technological feasibility*	Ch. 1, Sec. 6(b)	A	NO		
APPENDIX A	*Available technology*	Ch. 1, Sec. 6(c)	A	NO		
APPENDIX A	*Closure*	Ch. 1, Sec. 6(d)	A	NO		
APPENDIX A	*Closure plan*	Ch. 1, Sec. 6(e)	A	NO		

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
APPENDIX A	*Compliance period*	Ch. 1, Sec. 6(f)	A	NO		
APPENDIX A	*Dike*	Ch. 1, Sec. 6(g)	A	NO		
APPENDIX A	*Disposal area*	Ch. 1, Sec. 6(h)	A	YES	NO	Reference to Criterion 6 is changed to the full reference 10 CFR, Part 40, Appendix A, Criterion 6.
APPENDIX A	*Existing portion*	Ch. 1, Sec. 6(i)	A	NO		
APPENDIX A	*Factors beyond the control of the licensee*	Ch. 1, Sec. 6(j)	A	YES	NO	Reference to Criterion 6 is changed to the full reference 10 CFR, Part 40, Appendix A, Criterion 6.
APPENDIX A	*Final radon barrier*	Ch. 1, Sec. 6(k)	A	YES	NO	Reference to Criterion 6 is changed to the full reference 10 CFR, Part 40, Appendix A, Criterion 6.
APPENDIX A	*Ground water*	Ch. 1, Sec. 6(l)	A	YES	NO	Reference to Criterion 6 is changed to the full reference 10 CFR, Part 40, Appendix A, Criterion 6.
APPENDIX A	*Leachate*	Ch. 1, Sec. 6(m)	A	NO		
APPENDIX A	*Licensed site*	Ch. 1, Sec. 6(n)	A	NO		
APPENDIX A	*Liner*	Ch. 1, Sec. 6(o)	A	NO		
APPENDIX A	*Milestone*	Ch. 1, Sec. 6(p)	A	NO		

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
APPENDIX A	*Operation*	Ch. 1, Sec. 6(q)	A	NO		
APPENDIX A	*Point of compliance*	Ch. 1, Sec. 6(r)	A	NO		
APPENDIX A	*Reclamation plan*	Ch. 1, Sec. 6(s)	A	NO		
APPENDIX A	*Surface impoundment*	Ch. 1, Sec. 6(t)	A	NO		
APPENDIX A	*Uppermost aquifer*	Ch. 1, Sec. 6(u)	A	NO		
APPENDIX A, I. Technical Criteria	*Criterion 1*	Ch. 4 Sec. 3(a)	C	NO		Incorporated by reference.
APPENDIX A, I. Technical Criteria	*Criterion 2*	Ch. 4 Sec. 3(a)	C	NO		Incorporated by reference.
APPENDIX A, I. Technical Criteria	*Criterion 3*	Ch. 4 Sec. 3(a)	C	NO		Incorporated by reference.
APPENDIX A,	*Criterion 4*	Ch. 4, Sec. 3(a)	C	NO		Incorporated by reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
I. Technical Criteria						
APPENDIX A, I. Technical Criteria	*Criterion 5*	Ch. 4, Sec. 3(a)	C	NO		Criteria 5A-5D and new Criterion 13 incorporate the basic ground-water protection standards imposed by the Environmental Protection Agency in 40 CFR Part 192, Subparts D and E (48 FR 45926; October 7, 1983) which apply during operations and prior to the end of closure. Ground-water monitoring to comply with these standards is required by Criterion 7A.
APPENDIX A, I. Technical Criteria	*Criterion 5A*	Ch. 4, Sec. 3(a)	C	NO		Incorporated by reference.
APPENDIX A, I. Technical Criteria	*Criterion 5B*	Ch. 4, Sec. 3(a)	C	NO		Incorporated by reference.
APPENDIX A, I. Technical Criteria	*Criterion 5C*	Ch. 4, Sec. 3(a)	C	NO		Incorporated by reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
APPENDIX A, I. Technical Criteria	*Criterion 5D*	Ch. 4, Sec. 3(a)	C	NO		Incorporated by reference.
APPENDIX A, I. Technical Criteria	*Criterion 5E*	Ch. 4, Sec. 3(a)	C	NO		Incorporated by reference.
APPENDIX A, I. Technical Criteria	*Criterion 5F*	Ch. 4, Sec. 3(a)	C	NO		Incorporated by reference.
APPENDIX A, I. Technical Criteria	*Criterion 5G*	Ch. 4, Sec. 3(a)	C	NO		Incorporated by reference.
APPENDIX A, I. Technical Criteria	*Criterion 5H*	Ch. 4, Sec. 3(a)	C	NO		Incorporated by reference.
APPENDIX A, I. Technical Criteria	*Criterion 6*	Ch. 4, Sec. 3(a)	C	NO		Incorporated by reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
APPENDIX A, I. Technical Criteria	*Criterion 6A*	Ch. 4, Sec. 3(a)	C	NO		Incorporated by reference.
APPENDIX A, I. Technical Criteria	*Criterion 7*	Ch. 4, Sec. 3(a)	C	NO		Incorporated by reference.
APPENDIX A, I. Technical Criteria	*Criterion 7A*	Ch. 4, Sec. 3(a)	C	NO		Incorporated by reference.
APPENDIX A, I. Technical Criteria	*Criterion 8*	Ch. 4, Sec. 3(a)	C	NO		Incorporated by reference.
APPENDIX A, I. Technical Criteria	*Criterion 8A*	Ch. 4, Sec. 3(a)	C	NO		Incorporated by reference.
APPENDIX A, *II. Financial Criteria*	*Criterion 9*	Ch. 4, Secs. 3(a) and 3(b)	C	YES	YES	Incorporated by reference, except for Criterion 9(i)(4), which is excluded as it pertains to standby trusts.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
APPENDIX A, *II. Financial Criteria*	*Criterion 10*	Ch. 4, Sec. 3(a)	C	NO		Incorporated by reference.
APPENDIX A, *III. Site and Byproduct Material Ownership*	*Criterion 11A-F*	Ch. 4, Sec. 3(b)	NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.
APPENDIX A, *IV. Long-Term Site Surveillance*	*Criterion 12*	Ch. 4, Sec. 3(b)	NRC	YES	NO	NRC Compatibility, excluded from State regulations to maintain NRC jurisdiction.
APPENDIX A, *V. Hazardous Constituents*	Criterion 13	Ch. 4, Sec. 3(a)	C	NO		Incorporated by reference.

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Please Note: The brackets "[ ]" around a compatibility category designation means that the Section may have been adopted elsewhere in a State rule, and it is not necessary to adopt it again. IBR means Incorporation by Reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Different Y/N	Significant Y/N	If Difference, Why or Why Not was a Comment Generated?
§71.0 (a), (b), (d), (e), (f), & (g)	Purpose and Scope	N/A	D	YES	NO	Compatibility D, not included in State Regulations.
§71.0(c)aZ	Purpose and Scope	Ch. 9, Secs. 1 and 2	[B]	YES	NO	Stylistic changes to fit State regulations.
§71.1	Communications and Records	N/A	D	YES	NO	Compatibility D, not included in State regulations.
§71.2	Interpretations	N/A	D	YES	NO	Compatibility D, not included in State regulations.
§71.3	Requirements for license	Ch. 9, Sec. 3(a)	[B]	NO		Incorporated by reference.
§71.4	Definitions	Ch. 9, Sec. 3(a)	[B]	NO		Incorporated by reference (with a few exceptions shown below).
§71.4	A_1	Ch. 9, Sec. 3(a)	[B]	NO		Incorporation by reference.
§71.4	A_2	Ch. 9, Sec. 3(a)	[B]	NO		Incorporation by reference.
§71.4	Carrier	Ch. 9, Sec. 3(a)	[B]	NO		Incorporation by Reference.
§71.4	Certificate holder	Ch. 9, Sec. 3(c)	[B]	YES	YES	Excluded, terminology is not applicable to the scope of authority Wyoming is seeking. Not seeking Type B Packages.
§71.4	Certificate of Compliance (CoC)	Ch. 9, Sec. 3(c)	[B]	NO		Incorporation by reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Different Y/N	Significant Y/N	If Difference, Why or Why Not was a Comment Generated?
§71.4	Close reflection by water	Ch. 9, Sec. 3(c)	D	N/A		Compatibility D, not included in State regulations
§71.4	Consignment	Ch. 9, Sec. 3(a)	[B]	NO		Incorporation by reference.
§71.4	Containment system	Ch. 9, Sec. 3(c)	D	N/A		Compatibility D, not included in State regulations.
§71.4	Contamination	Ch. 1, Sec. 5(ac) & IBR	[B]	Yes	Yes	The definition presented in 10 C.F.R Part 71 is incorporated by reference (IBR), but in Ch. 1, "General Provisions", contamination limits for operational releases are presented.
§71.4	Conveyance	Ch. 9, Sec. 3(a)	[B]	NO		Incorporation by reference.
§71.4	Criticality Safety Index (CSI)	Ch. 9, Sec. 3(c)	[B]	YES	YES	Excluded, "Fissile Material" and the associated terminology is not applicable to the scope of authority Wyoming is seeking.
§71.4	Deuterium	Ch. 9, Sec. 3(c)	[B]	YES	YES	Excluded, Deuterium will not be included in the scope of material Wyoming is seeking.
§71.4	DOT	Ch. 9, Sec. 3(a)	[B]	NO		Incorporation by reference.
§71.4	Exclusive use	Ch.1, Sec. 5(az) & IBR	[B]	NO	NO	
§71.4	Fissile material	Ch. 9, Sec. 3(c)	[B]	YES	YES	Fissile Material will not be included in the scope of material Wyoming is seeking.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Different Y/N	Significant Y/N	If Difference, Why or Why Not was a Comment Generated?
§71.4	Graphite	Ch. 9, Sec. 3(c)	[B]	YES	YES	Excluded, Graphite will not be included in the scope of material Wyoming is seeking.
§71.4	Indian tribe	Ch. 9, Sec 3(a)	B	NO		Incorporation by reference.
§71.4	Licensed material	Ch. 1, Sec. 5(bt) & IBR	[D]	YES	NO	Compatibility D, State adjusted definition to fit States needs.
§71.4	Low Specific Activity (LSA) material	Ch. 1, Sec. 5(bx) & IBR	[B]	NO		
§71.4	Low toxicity alpha emitters	Ch. 9, Sec 3(a)	[B]	NO		Incorporation by reference.
§71.4	Maximum normal operating pressure	Ch. 9, Sec. 3(c)	D	YES	NO	Compatibility D, not included in State regulations.
§71.4	Natural thorium	Ch.1, Sec. 5(cb) & IBR	[B]	NO		
§71.4	Normal form radioactive material	Ch. 9, Sec. 3(a)	[B]	NO		Incorporation by reference.
§71.4	Optimum interspersed hydrogenous moderation	Ch. 9, Sec. 3(c)	D	YES	NO	Compatibility D, not included in State Regulations
§71.4	Package	Ch. 9, Sec. 3(d)	[B]	NO		Incorporation by reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Different Y/N	Significant Y/N	If Difference, Why or Why Not was a Comment Generated?
§71.4	Packaging	Ch. 9, Sec. 3(a)	[B]	NO		Incorporation by reference.
§71.4	Special form radioactive material	Ch. 9, Sec. 3(c)	[B]	NO		Incorporation by reference.
§71.4	Specific activity	Ch. 1, Sec. 4(dl) & IBR	[B]	YES	NO	The specific activity for natural uranium was added to the definition.
§71.4	Spent nuclear fuel	Ch. 9, Sec. 3(c)	D	N/A		Compatibility D, not included in State regulations.
§71.4	State	Ch. 9, Sec. 3(c)	D	N/A		Compatibility D, not included in State regulations.
§71.4	Surface Contaminated Object (SCO)	Ch. 9, Sec. 3(a)	[B]	NO		Incorporation by reference.
§71.4	Transport Index (TI)	Ch. 9, Sec. 3(a)	[B]	NO		Incorporation by reference.
§71.4	Tribal official	Ch. 9, Sec. 3(a)	B	NO		Incorporation by reference.
§71.4	Type A quantity	Ch. 9, Sec. 3(a)	[B]	NO		Incorporation by reference.
§71.4	Type B quantity	N/A	[B]	NO		Incorporation by reference.
§71.4	Unirradiated uranium	Ch. 9, Sec. 3(a)	[B]	NO		Incorporation by reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Different Y/N	Significant Y/N	If Difference, Why or Why Not was a Comment Generated?
§71.4	Uranium-natural, depleted, enriched	Ch. 1, Sec. 5(cc) & Ch. 9, Sec. 3(c)	[B]	YES	YES	Only natural uranium is defined. "Depleted" and "Enriched" will not be included. It is not in the scope of material Wyoming is seeking.
§71.5	Transportation of licensed material	Ch. 9, Sec. 3(a)	[B]	NO		Incorporated by reference.
§71.6	Information collection requirements: OMB approval	Ch. 9, Sec. 3(b)	D	N/A		Compatibility D, not included in State regulations.
§71.7	Completeness and accuracy of information	Ch. 9, Sec. 3(b)	D	N/A		Compatibility D, not included in State regulations.
§71.8	Deliberate misconduct	Ch. 1, Sec. 10(a)	C	YES	YES	Excluded from 71.8, included in Ch. 1, Sec. 10(a).
§71.9	Employee protection	Ch. 9, Sec. 3(b)	D	N/A		Compatibility D, not included in State regulations.
§71.10	Public inspection of application	Ch. 9, Sec. 3(a)	[B]	NO		Incorporated by reference.
§71.11	Protection of Safeguards Information	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Different Y/N	Significant Y/N	If Difference, Why or Why Not was a Comment Generated?
§71.12	Specific exemptions	Ch. 9, Sec. 3(a)	[B]	NO		Incorporated by reference.
§71.13	Exemption of physicians	Ch. 9, Sec. 3(b)	B	YES	YES	The exemption provided for physicians is outside the scope of authority Wyoming is seeking
§71.14(a)	Exemption for low-level materials	Ch. 9, Sec. 3(a)	[B]	NO		Incorporated by reference.
§71.14(b)	Exemption for low-level materials	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.15	Exemption from classification as fissile material	Ch. 9, Sec. 3(b)	[B]	YES	YES	Fissile material is outside the scope of authority that Wyoming is seeking.
§71.16	Reserved	Ch. 9, Sec. 3(b)				Excluded.
§71.17	General license: NRC-approved package	Ch. 9, Sec. 3(a)	B	NO		Incorporation by reference.
§71.18	Reserved	Ch. 9, Sec. 3(b)				Excluded.
§71.19	Previously approved package	Ch. 9 Sec. 3(b)	[B]	YES	NO	Excluded. Fissile material is outside the scope of authority that Wyoming is seeking.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Different Y/N	Significant Y/N	If Difference, Why or Why Not was a Comment Generated?
§71.20	[Removed]	N/A	The general license in 10 C.F.R 71.20 expired on October 1, 2008, and has been deleted from Part 71.			Excluded.
§71.21	General license: Use of foreign approved package	Ch. 9, Sec. 3(a)	B	NO		Incorporation by reference.
§71.22	General license: Fissile material	Ch. 9, Sec. 3(b)	[B]	YES	YES	Excluded. Fissile material is outside the scope of authority that Wyoming is seeking.
§71.23	General license: Plutonium beryllium special form material	Ch. 9, Sec. 3(b)	[B]	YES	YES	Plutonium and beryllium special form are outside the scope of material that Wyoming is seeking.
§71.24	Reserved	Ch. 9, Sec. 3(b)				Excluded.
§71.25	Reserved	Ch. 9, Sec. 3(b)				Excluded.
§71.31	Contents of application	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.33	Package description	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Different Y/N	Significant Y/N	If Difference, Why or Why Not was a Comment Generated?
§71.35	Package evaluation	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.37	Quality assurance	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.38	Renewal of a certificate of compliance or quality assurance program approval	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.39	Requirement for additional information	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.41	Demonstration of compliance	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.43	General standards for all packages	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.45	Lifting and tie-down standards for all packages	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.47	External radiation standards for all packages	Ch. 9, Sec 3(a)	[B]	NO		Incorporated by reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Different Y/N	Significant Y/N	If Difference, Why or Why Not was a Comment Generated?
§71.51	Additional requirements for Type B packages	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.53	Reserved	Ch. 9, Sec. 3(b)				Excluded.
§71.55	General requirements for fissile material packages	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.57	Reserved	Ch. 9, Sec. 3(b)				Excluded.
§71.59	Standards for arrays of fissile material packages	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.61	Special requirements for Type B packages containing more than 10^5 A_2	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.63	Special requirements for plutonium shipments	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Different Y/N	Significant Y/N	If Difference, Why or Why Not was a Comment Generated?
§71.64	Special requirements for plutonium air shipments	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.65	Additional requirements	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.70	Incorporations by reference	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.71	Formal conditions of transport	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.73	Hypothetical accident conditions	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.74	Accident conditions for air transport of plutonium	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.75	Qualification of special form radioactive material	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.77	Qualification of LSA-III material	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Different Y/N	Significant Y/N	If Difference, Why or Why Not was a Comment Generated?
§71.81	Applicability of operating controls and procedures	Ch. 9, Sec. 3(b)	D	YES	NO	Compatibility D, not included in State regulations.
§71.83	Assumptions as to unknown properties	Ch. 9, Sec. 3(b)	[B]	YES	YES	Excluded, Fissile material is outside the scope of authority that Wyoming is seeking.
§71.85(a) – (c)	Preliminary determinations	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.85(d)	Preliminary determinations	Ch. 9, Sec. 3(a)	B	NO		Incorporation by reference.
§71.87	Routine determinations	Ch. 9, Secs. 3(a) & 3(b)	[B]	YES	YES	§71.87(g) fissile material is excluded, outside the scope of authority sought by the State.
§71.88	Air transport of plutonium	Ch. 9, Sec. 3(b)	[B]	YES	YES	Excluded, Plutonium is outside the scope of authority assumed by the State.
§71.89	Opening instructions	Ch. 9, Sec. 3(a)	[B]	NO		Incorporated by reference.
§71.91(a)	Records	Ch. 9, Secs. 3(a) & 3(b)	C	YES	YES	Incorporation by reference. §71.91(a)(5) & (a)(7) fissile material is excluded, outside the scope of authority sought by the State.
§71.91(b)	Records	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Different Y/N	Significant Y/N	If Difference, Why or Why Not was a Comment Generated?
§71.91(c) – (d)	Records	Ch. 9, Sec. 3(a)	[B]	NO		Incorporated by reference.
§71.93	Inspection and tests	Ch. 9, Sec. 3(a)	D	NO		Incorporation by reference.
§71.95	Reports	Ch. 9, Sec. 3(b)	D	YES	NO	Compatibility D, not included in State regulations.
§71.97	Advance notification of shipment of irradiated reactor fuel and nuclear waste	Ch. 9, Sec. 3(b)	B	YES	YES	Excluded, outside the scope of authority the State is seeking.
§71.99	Violations	Ch. 9, Sec. 3(b)	D	YES	NO	Compatibility D, not included in State Regulations.
§71.100	Criminal penalties	Ch. 9, Sec. 3(b)	D	YES	NO	Compatibility D, not included in State regulations.
§71.101 (a),(b)& (c)(1)	Quality assurance requirements	Ch. 9, Sec. 3(a)	C**	NO		Incorporation by reference.
§71.101 (c)(2), (d)&(e)	Quality assurance requirements	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Different Y/N	Significant Y/N	If Difference, Why or Why Not was a Comment Generated?
§71.101 (f)	Quality assurance requirements	Ch. 9, Sec. 3(a)	D	NO		Incorporation by reference.
§71.101 (g)	Quality assurance requirements	Ch. 9, Sec. 3(a)	C**	NO		Incorporation by reference.
§71.103 (a)&(b)	Quality assurance organization	Ch. 9, Sec. 3(a)	C**	NO		Incorporation by reference.
§71.103 (c),(d),(e), & (f)	Quality assurance organization	Ch. 9, Sec. 3(a)	D	NO		Incorporation by reference.
§71.105	Quality assurance program	Ch. 9, Sec. 3(a)	C	NO		Incorporation by reference.
§71.106	Changes to quality assurance program	Ch. 9, Sec. 3(a)	C	NO		Incorporation by reference.
§71.107	Package design control	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.109	Procurement document control	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.111	Instructions, procedures and drawings	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Different Y/N	Significant Y/N	If Difference, Why or Why Not was a Comment Generated?
§71.113	Document control	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.115	Control of purchased material, equipment, and services	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.117	Identification and control of materials, parts and components	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.119	Control of special processes	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.121	Internal inspection	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.123	Test control	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.125	Control of measuring and test equipment	Ch. 9, Sec. 3(b)	NRC	YES	YES	Excluded from regulations because it is a reserved NRC function.
§71.127	Handling, storage, and shipping control	Ch. 9, Sec. 3(a)	[C]	NO		Incorporation by reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Different Y/N	Significant Y/N	If Difference, Why or Why Not was a Comment Generated?
§71.129	Inspection, test, and operating status	Ch. 9, Sec. 3(a)	[C]	NO		Incorporation by reference.
§71.131	Nonconforming materials, parts, or components	Ch. 9, Sec. 3(a)	[C]	NO		Incorporation by reference.
§71.133	Corrective action	Ch. 9, Sec. 3(a)	C	NO		Incorporation by reference.
§71.135	Quality assurance records	Ch. 9, Sec. 3(a)	C**	NO		Incorporation by reference.
§71.137	Audits	Ch. 9, Sec. 3(a)	C	NO		Incorporation by reference.
Appendix A	Determination of A_1 and A_2	Ch. 9, Sec. 3(a)	[B]	NO		Incorporated by reference.
Appendix A, Table A–1	A_1 and A_2 Values for Radionuclides	Ch. 9, Sec. 3(a)	[B]	NO		Incorporated by reference.
Appendix A, Table A–2	Exempt Material Activity Concentrations and Exempt Consignment Activity Limits for Radionuclides	Ch. 9, Sec. 3(a)	[B]	NO		Incorporated by reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Different Y/N	Significant Y/N	If Difference, Why or Why Not was a Comment Generated?
Appendix A, Table A–3	General Values for A_1 and A_2	Ch. 9, Sec. 3(a)	[B]	NO		Incorporated by reference.

******Note: §71.101(g) indicates that QA programs for industrial radiography Type B package users are covered by §34.31(b). It also indicates that this section satisfies §71.17(b) and therefore will satisfy those sections referenced in this provision (§§71.101 through 71.137).

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Please Note: The brackets "[ ]" around a compatibility category designation means that the Section may have been adopted elsewhere in a State rule, and it is not necessary to adopt it again. IBR means Incorporation by Reference.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§150.1	Purpose	Ch. 4, Sec. 1(a)	D	YES	NO	Compatibility D, not included in State Regualtions.
§150.2	Scope	Ch. 4, Sec. 2(a)	D	YES	NO	Compatibility D, not included in State Regualtions..
§150.3	Definitions					
§150.3	Act	Ch. 1, Sec. 5(b)	D	YES	NO	Compatibility D, modified to refer to Wyoming Environmental Quality Act, W.S. §§35-11-103 et seq..
§150.3	Agreement State	Ch. 1, Sec. 5(f)	B	YES	NO	"The Act" is replaced with "Atomic Energy Act of 1954, as amended".
§150.3	Byproduct Material	Ch. 1, Sec. 5(s)	H&S	YES	YES	Only the definition related to the scope of authority that the State is seeking was included in the definition. Further clarification of the definition was added by referencing the definition in Section 11e.(2) of the AEA.
§150.3	Commission	Ch. 1, Sec. 5(x)	D	YES	NO	Added language to make NRC an equivalent term.
§150.3	Discrete source	Ch. 1, Sec. 5(ao)	H&S	NO		
§150.3	Foreign obligations	N/A	NRC	YES	NO	Excluded from regulations because it is a reserved NRC function.
§150.3	Government Agency	N/A	D	YES	NO	Compatibility D, not included in State regulations.
§150.3	Offshore Waters	N/A	B	YES	YES	Term excluded from State regulations. Scope of material Wyoming is seeking to assume would not have transboundary effects that

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
						would effect offshore waters. Those rights reserved to NRC in offshore waters is still preserved through statute and rules.
§150.3	Person	Ch. 1, Sec. 5(ch)	C	YES	NO	The language matches WY Environmental Quality Act. Not a significant change.
§150.3	Production facility	N/A	D	YES	NO	Compatibility D, not included in State regulations.
§150.3	Source material	Ch. 1, Sec. 5(dk)	A	YES	NO	Used 10 CFR Part 40 definition.
§150.3	Special nuclear material	Ch. 1, Sec. 5(dm)	A	NO		
§150.3	State	N/A	D	YES	NO	Compatibility D, not included in State regulations.
§150.3	Utilization facility	N/A	D	YES	NO	Compatibility D, not included in State regulations.
§150.3	Uranium enrichment facility	N/A	D	YES	NO	Compatibility D, not included in State regulations.
§150.4	Communications	N/A	D	YES	NO	Compatibility D, not included in State regulations.
§150.5	Interpretations	N/A	D	YES	NO	Compatibility D, not included in State regulations.
§150.7	Persons in offshore waters not exempt	N/A	NRC	YES	NO	Rights Reserved to the NRC. Not incorporated into State regulations.
§150.8	Information collection requirements: OMB approval	N/A	D	YES	NO	Compatibility D, not included in State regulations.
§150.10	Persons exempt	N/A	NRC	YES	NO	Rights reserved to the NRC. Not incorporated into State regulations
§150.11	Critical mass	N/A	B	YES	YES	This definition is not applicable to the scope of authority that Wyoming is seeking, therefore the definition is not included.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
§150.14	Commission regulatory authority for physical protection	N/A	NRC	YES	NO	Rights reserved to the NRC. Not incorporated into State regulations.
§150.15	Persons not exempt	Ch. 4, Sec. 3(d)	NRC	YES	NO	Excluded, the rights described are reserved to the NRC.
§150.15a	Continued Commission authority pertaining to byproduct material	Ch. 4, Sec. 3(d)	NRC	YES	NO	Excluded, the rights described are reserved to the NRC.
§150.16	Submission to Commission of nuclear material transfer reports	N/A	NRC	YES	NO	Rights reserved to the NRC. Not incorporated into State regulations.
§150.17	Submission to Commission of source material reports	N/A	NRC	YES	NO	Rights reserved to the NRC. Not incorporated into State regulations.
§150.17a	Compliance with requirements of US/ IAEA safeguards agreement	N/A	NRC	YES	NO	Rights reserved to the NRC. Not incorporated into State regulations.
§150.19	Submission to Commission of tritium reports	N/A	NRC	YES	NO	Rights Reserved to the NRC. Not incorporated into State regulations
§150.20	Recognition of Agreement State licenses	Ch. 4, Sec. 3(c)	C	NO	NO	Incorporation by reference.
§150.21	Transportation of special nuclear	N/A	NRC	YES	NO	Rights reserved to the NRC. Not incorporated into State regulations.

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?
	material by aircraft					
§150.30	Violations	N/A	D	YES	NO	Compatibility D, not included in State regulations.
§150.31	Requirements for Agreement State regulation of byproduct material	Ch. 4, Secs. 3(c) & 3(d)	C- States with authority to regulate uranium mill activities 11e.(2) byproduct material D- States without authority	YES	NO	The Terms for "Construction" and "Commencement of Construction" were excluded since they are defined in Ch. 1, "General Provisions" Sec 5 (w) & (ab). §150.31(b)(3)(iv) is specifically excluded in Ch. 4, Sec. 3(d).
§150.32	Funds for reclamation or maintenance of byproduct material	Ch. 6, Sec. 4(b) & Sec. 7(v)(A)	C- States with authority to regulate uranium mill activities (11e.(2) byproduct material) D- States without authority	YES	NO	Wording is different, but the principle is the same.
§150.33	Criminal penalties	N/A	D	YES	NO	Compatibility D, not included in State Regulations

NRC Regulation Section	Section Title	State Section	Compatibility Category	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not was a Comment Generated?

FOOTNOTES:

[i.] The term “Deterministic effect”, if defined essentially identical to “Nonstochastic effect”, is an acceptable substitute.
[ii] The term “Probabilistic effect”, if defined essentially identical to “Stochastic effect”, is an acceptable substitute.
[iii] States may adopt a single provision that incorporates those requirements in 10 CFR 30.31, 40.20, and 70.18.

Subsection 4.3
Licensing Program Elements

Department of Environmental Quality

WYOMING

4.3 Licensing Program Elements

The review team should be able to conclude that the State's technical licensing procedures are thorough, complete, consistent, and of acceptable technical quality that address health and safety. The State's procedures should include requirements for pre licensing verification and for ensuring enhanced security requirements that are in place prior to issuing a license, where these requirements are necessary. A State may adopt technical licensing procedures modeled on the Nuclear Regulatory Commission (NRC) procedures and those used by existing Agreement States.

Nontechnical administrative procedures are usually not key contributors to program performance. The review team usually reviews samples of these procedures. The team only needs to conclude that the State has written administrative procedures or licensing, and that they contain no obvious defects.

- Wyoming technical licensing procedures, found in Appendix A, are compatible and adequate with NRC requirements.

4.3.1 Procedures for the Technical Evaluation of Proposed Uses of Radioactive Material

The technical procedures address the radiation safety issues necessary for the safe and secure storage, possession and use of the licensed materials. They do not address license fees, license file maintenance, or other materials program administrative issues.

- Wyoming’s procedures for the technical evaluation of the proposed uses of the radioactive material, found in Appendix A, Section 2.0 and Section 3.0, are compatible and adequate with NRC requirements.

4.3.1.1 Information needed

The State should submit its technical licensing procedures. If not part of the procedure, the State should include standard review plans, checklists, and licensing guides.

- Wyoming’s procedures for the technical evaluation of the proposed uses of the radioactive material, found in Appendix A, Section 2.0 and Section 3.0, are compatible and adequate with NRC requirements. Further checklists for the evaluation of a license application, also compatible and adequate with NRC requirements, are found in Appendix C and Appendix D.

4.3.1.2 Evaluation criteria

The technical procedures are detailed and complete to allow for the comprehensive evaluation of this application. The procedures should cover each type of license (by program code) for which an NRC licensee will transfer to the State. Guidance documents, or copies of the procedures containing guidance, will be available to license applicants.

The procedures should:

a. Address assessment of the applicant's facilities and safety equipment, training, and experience in the use of the materials for the purpose requested, and proposed managerial controls;

- These procedures may be found in Section 3.2 ("Assessment of Applicant's Facilities, Safety, and Managerial Controls") of the URP *Licensing Procedural Manual*.

b. Address security requirements for radioactive materials in quantities of concern, including requirements for pre-licensing visits for the following:

I. New entities that do not have an existing Agreement State or NRC license;
II. Licensees changing ownership to an unknown entity; or
III. Licensees that are significantly expanding the size or scope of their existing license;

- These procedures may be found in Section 3.3 ("Security Requirements for Licensed Materials") of the URP *Licensing Procedural Manual*.

c. Provide for information exchange between the program's inspection staff and licensing staff; and

- These procedures may be found in Section 3.4 ("Information Exchange between Inspection and Licensing Staff") of the URP *Licensing Procedural Manual*.

d. Specify the required qualifications of license reviewers for each license program code. Alternately, the procedures may reference a staff qualification plan.

- The State of Wyoming procedures for qualifications of staff are covered in Section 3.5 ("Qualifications for License Reviewers") of the URP *Licensing Procedural Manual*. This particular section references the detailed procedures in URP Section 4.6.2 "Formal Qualification Plan" which is found in Section 4.6 of this application titled *Technical Staffing and Training Elements*. Procedures for handling places and conditions of storage are located in Section 3.6 ("Places and Conditions of Storage") of the URP *Licensing Procedural Manual*. Procedures for handling places and conditions of use may be found in Section 3.7 ("Places and Conditions of Use") of the URP *Licensing Procedural Manual*.

State procedures should provide guidance for the evaluation of technical issues in license applications. The issues evaluated include: places and conditions of storage; places and conditions of use, and decommissioning of facilities and equipment. Evaluation of the places of storage and use should address environmental considerations. State procedures for evaluating the conditions of storage and use should address security against unauthorized removal, and safety equipment. Procedures for evaluating the conditions of use should address the following:

a. Qualification of users; License operating and emergency procedures;

b. Appropriate surveys;

c. Personnel monitoring under the close supervision of technically qualified individuals; and

d. Preparations for transport.

Procedures for evaluating decommissioning address decontamination, disposal, and any restrictions on the future uses of the property. The procedures should also address funding and sureties.

- Decommissioning procedures may be found in Section 4.0 ("Decommissioning of Facilities and Equipment") of the URP *Licensing Procedural Manual*.

In licensing research and development, medical uses, or other activity involving multiple uses of materials, the State may issue broad scope licenses without evaluating each specific use.

- As the State of Wyoming will only be authorized to license 11e.(2) byproduct and associated source material, the State will not be issuing broad scope licenses.

The NRC application review team may use the NRC procedures and consolidated guidance to evaluate the State procedures. However, the NRC does not require States to adopt the NRC procedures and consolidated guidance. The State procedures should provide the same level of detail as the equivalent NRC procedure. The State's procedures should address all significant technical issues.

4.3.2 Procedures for the Evaluation of Radiation Safety Information on Sealed Sources and Devices and Registration for Distribution

- Wyoming has not adopted these procedures since the NRC will retain the authority over sealed sources and devices.

4.3.3 Procedure for Conducting the Evaluation of a Regulatory Program for a Low-level Radioactive Waste Land Disposal Site

- Wyoming has not adopted these procedures since the NRC will retain the authority over low-level radioactive waste land disposal sites.

4.3.4 Procedure for Conducting the Evaluation of a Regulatory Program for 11e.(2) Byproduct Material including Uranium or Thorium Milling Facilities

The regulatory program for 11e.(2) byproduct material including a uranium or thorium milling facility has significant health and safety implications. It requires substantial resources beyond those needed for conducting routine licensing evaluations and inspections. If the State will regulate a site, it should have the resources and procedures to conduct a site evaluation and inspection, even if the NRC will transfer an established site.

If the NRC will not transfer a licensed site or an application for a site license, and there is no reasonable expectation of an application for a license being submitted in the foreseeable future, the State may assume the authority without having the resources and procedures in place. In this case, information showing that the State has the authority to acquire the resources and adopt appropriate procedures before undertaking the implementation of a program, accompanied by the conceptual description of the program, is sufficient.

4.3.4.1 Information Needed

The State should submit a concise description of its program for regulating 11e.(2) byproduct material. The description should include a discussion of the resources available to the program. The State should also submit its procedures for conducting the technical licensing evaluations and inspections. If the State will use contractor assistance in the evaluation, it should submit procedures for assuring the quality of contractor performance.

- Wyoming's procedures for handling 11e.(2) byproduct material from uranium and thorium milling facilities may be found in Section 5.0 ("Procedures for Conducting the Evaluation of a Regulatory Program for 11e.(2) Byproduct Material including Uranium or Thorium Milling Facilities") of the URP *Licensing Procedural Manual*.

4.3.4.2 Evaluation Criteria

The State procedures contain the same level of detail as the equivalent NRC procedures. However, the NRC does not require the procedures to be identical to the NRC's if the State's procedures address all significant technical issues. The State procedures should be consistent with the NRC procedures with respect to the following:

a. Technical issues evaluated;

b. Qualifications of the personnel performing evaluations;

c. Ensuring the quality of the licensing action; and

d. Inspection procedures, including security related inspections.

- Wyoming's procedures for handling technical issues may be found in Section 2.0 ("Technical Procedures for License Review") and Section 3.0 ("Procedures for Handling License Actions") of the URP *Licensing Procedural Manual*. The procedures for qualifications of personnel performing evaluations may be found in Section 4.6.2 "Formal Qualification Plan" which is found in Section 4.6 of this application titled *Technical Staffing and Training Elements*. Procedures for ensuring the technical quality of the licensing actions are found in Section 6.0 ("Procedures for Assuring the Technical Quality of Licenses") of the URP *Licensing Procedural Manual*. Inspection procedures, including security related inspections may be found in the URP manual titled *Inspection Procedures for Active Uranium Recovery Facilities*.

4.3.5 Procedures for Assuring the Technical Quality of Licenses

A secondary review of license applications is beneficial for quality assurance purposes and can be used to evaluate the completeness of initial reviews of license applications. Peer and supervisory review are commonly used. Larger programs may use a committee to conduct reviews of selected application evaluations recently completed. Other forms of effective quality assurance programs are acceptable.

4.3.5.1 Information Needed

The State should submit its procedures that address peer review, supervisory review, and any other method to assure the quality of licensing actions.

- Wyoming's procedures for assuring the technical quality of licenses may be found in Section 6.0 ("Procedures for Assuring the Technical Quality of Licenses") of the URP *Licensing Procedural Manual*, found in Appendix A.

4.3.5.2 Evaluation Criteria

The State should have written licensing procedures that provide a standard process for reviewing the quality of licensing actions. The procedures should reflect the organization of the State program and any special requirements of State law.

- Wyoming's procedures for reviewing the quality of licensing actions may be found in Section 6.0 ("Procedures for Assuring the Technical Quality of Licenses") of the URP *Licensing Procedural Manual*.

4.3.6 Administrative Licensing Procedures

The routine operation of the program requires administrative processing of licenses beyond the technical evaluations. Written procedures describing the administrative processing steps are useful to assure that all procedural requirements are completed. They may become critical if there is an unexpected turnover of senior staff.

On the effective date of the Agreement, the NRC transfers to the State those NRC licenses that the State will regulate under the authority of its Agreement. The NRC and the State must make appropriate arrangements so that there will be no interference with or interruption of licensed activities or the processing of license applications because of the transfer. Licensees must be able to continue their licensed activities without interruption upon transfer of the license on the effective date of the Agreement. The licensee will continue under the State regulatory framework at this point. The NRC is committed to transferring complete license files that the State can use in issuing its own license to licensees. The State can recognize the transferred NRC licenses, including licenses under timely renewal, as State licenses. Those licenses then continue in effect until they are replaced by licenses issued by the State. The State may propose an alternative to transferring licenses, if desired.

4.3.6.1 Information Needed

The State should submit its administrative procedures for licensing. The procedures should address the following:

a. Receipt of licensing actions;

b. Timely renewal notifications;
c. Assignment of licensing actions to technical evaluators;
d. License document preparation;
e. Tracking of action progress;

f. The signing of completed licenses;

g. Transmittal of the signed license to the licensee; and

h. Maintenance of license files.

The State should submit procedures for ensuring the continued validity of licenses affected by the Agreement. The State should have procedures to receive, store, and regulate the licenses as State licenses. The transfer should produce the least interference with licensed activities or the processing of license applications as is practical.

- Wyoming's procedures for administrative processing of licenses may be found in Section 7.1 ("Administrative Processing of Licenses") of the URP *Licensing Procedural Manual*.

4.3.6.2 Evaluation Criteria

The State should have program specific written procedures to guide licensing program staff. The procedures should reflect the program organization and any special requirements of State law (i.e., who can sign licenses). Since these procedures do not require a thorough review, the team may review a selected sampling of the procedures instead.

The State must provide a statement as to how it will handle the transferred licenses from the NRC. Often, a State will have statutory authority to accept the NRC licenses as State licenses, with all legal authority under the State law, until the State converts the NRC license to a State license.

- Wyoming's procedures for administrative processing of licenses and transfer of licenses from the NRC are found in Sections 7.1 ("Administrative Processing of Licenses") and 7.2 ("Transfer of NRC Licenses to the State of Wyoming URP") of the URP *Licensing Procedural Manual*

Appendix A to Subsection 4.3
Licensing Procedure Manual

Department of Environmental Quality

WYOMING

Licensing Procedural Manual

Uranium Recovery Program

December 2017

Department of Environmental Quality

WYOMING

1.0 Introduction

Wyoming's Uranium Recovery Program (URP) has developed procedures for licensing requirements for radioactive licensed materials within the State of Wyoming. The procedures included in this manual are based upon the following Nuclear Regulatory Commission (NRC) and State of Wyoming references and resources:

1. NRC Criteria Policy Statement, Criteria 1, 7, 8, 9a, 13, 14, 15, 20, 23, 25, 29, 30, 31, 32, 33, 34, and 35;
2. NRC Inspection Manual Chapter 2602, *Decommissioning Oversight and Inspection Program for Fuel Cycle Facilities and Materials Licenses*;
3. NRC Inspection Manual Chapter 2882, *Transfer of NRC License Files to Agreement State(s)*;
4. NRC Management Directive 5.6, *Integrated Materials Performance Evaluation Program (IMPEP);*
5. NRC State Agreement Procedure SA-104, *Reviewing the Common Performance Indicator, Technical Quality of Licensing Actions;*
6. NRC State Agreement Procedure SA-110, *Reviewing the Non-Common Performance Indicator, Uranium Recovery Program;*
7. NRC State Agreement Procedure SA-900, *Termination of Uranium Milling Licenses in Agreement States;*
8. NUREG-1569, *Standard Review Plan for In Situ Leach Uranium Extraction License Applications*;
9. NUREG-1575, *Multi-Agency Radiation Survey and Site Investigation Manual* (MARSSIM);
10. NUREG-1620, *Standard Review Plan for the Review of a Reclamation Plan for Mill Tailings Sites Under Title II of the Uranium Mill Tailings Radiation Control Act of 1978;*
11. Applicable portions of NUREG-1757, *Consolidated Decommissioning Guidance (Generally speaking, NUREG-1757 excludes uranium recovery operations, however the guidance contains useful information that may be applied where warranted.);*
12. LQD Guideline #4, *In Situ Mining, Noncoal*;
13. URP Rules and Regulations, Chapter 1 General Provisions.
14. URP Rules and Regulations, Chapter 2, *Inspections, Enforcement, and Penalties;*
15. URP Rules and Regulations, Chapter 4, *Licensing Requirements for Source and Byproduct Material*;
16. URP Rules and Regulations, Chapter 6, *Financial Assurance*;
17. URP Rules and Regulations, Chapter 8, *Risk Informed Performance Based Licensing*;
18. URP Rules and Regulations, Chapter 10, *General Licenses*.

2.0 Technical Procedures for License Review

Radioactive materials licensing is a process whereby applicants are approved to receive, possess, and use licensed materials governed by the URP in Wyoming. Radioactive materials licensing may also include onsite disposal of licensed material for applicants approved to do so by the URP in Wyoming. These licensed materials include source material involved in the extraction and concentration of source material at uranium and thorium milling facilities, and 11e.(2) byproduct

material.

As qualified license reviewers, the URP reviews and approves the use of the licensed materials, the qualifications of the operators, and the place of use. There are several basic questions which should be asked to preface this license review procedure. These are:

- What is a license review?
- How is a license review performed?
- When is a license review performed?
- Who performs the license review?

This procedure answers each one of these questions. Adequate licensed materials programs must have personnel and procedures that address each of these questions.

2.1 What is a license review?

A license review is an evaluation, based on health physics, geology, hydrogeology, and other scientific principles, of a request to:

- change or update an existing license, or
- to request authorization for a new use condition in an existing license, or
- to request a new license and authorization, or
- to request a new or unusual use of licensed material.

The license review is designed to assure that the uses of, and authorizations for, licensed material will be adequate to protect the public health and safety of the general public and workers. It is the job of the URP to assure that license reviewers are well-trained in health physics principles, and that they understand the rules governing the safe handling of licensed material.

2.2 How is a license review performed?

The license review is based on regulations, guidance, scientific, and health physics principles. Using the appropriate review check sheets (see Appendices C and D) and licensing guidance available, the reviewer must read the requestor's application and supporting information, and decide if the application meets URP safety and technical criteria. The check sheets help assure safety and operational criteria are addressed.

After safety and operational criteria have been reviewed and deficiencies are identified, the reviewer writes a Request for Additional Information Letter. If there are no deficiencies, the reviewer writes a draft license along with a State Decision Document explaining why the URP is justified in issuing a license. After peer and supervisory review, and after public involvement, the license is issued.

2.3 When is a license review performed?

A license review is done any time a licensee submits a request for a license amendment (change to an existing license), a new license, or a renewal of an existing license. The URP is obligated to review the applications in a timely manner.

2.4 Who does the license review?

The license review is done by at least two persons: a main technical staff reviewer and a secondary peer staff reviewer. Both the main technical staff reviewer and the secondary peer staff reviewer may rely on the help and expertise of other Division staff in the review of any portion of the licensing action. The technical reviewer is responsible for the completion of the first (Phase I) review of a licensing action. This person has the responsibility to identify any gross health and safety deficiencies in a license application or amendment request, prepare Request for Additional Information letters, and write a draft version of the licensing action.

Phase I reviewers should use appropriate standard guidance to review actions to assure proper quality control, to conform to regulatory positions and evaluate health and safety issues. Various documents may be useful for license reviews and processing (see Section 1.0 references above; though this list is not exhaustive). License reviewers should remember that good health physics practices, earth science, and engineering principles guide the reviewers' evaluations of any action.

The peer reviewer is responsible for the second (Phase II) review of the licensing action. The purpose of this review is to serve as a quality control check on the accuracy of decisions made in Phase I, to issue a Request for Information letter, and to prepare a final copy of the licensing action for approval and signature.

3.0 Procedures for Handling License Actions

3.1 General Licensing Actions

(a) The applicant's submission is logged into the URP tracking system by the Office Support Specialist. After the submission has been logged into this system, the action item is given to the Program Manager for assignment to a main staff reviewer and staff peer reviewer. The Program Manager also prepares a completeness review (see Appendix C) in conjunction with the Office Support Specialist. Please note that the applicant will (only a few exceptions) file an application for a Noncoal Permit to Mine through the Wyoming Department of Environmental Quality (WDEQ) Land Quality Division (LQD), which will require coordination with the permit reviewer in the LQD. Pursuant to its existing processes, LQD will perform a separate review of the Noncoal Permit to Mine.

(b) The Program Manager must determine if the applicant's submission is a renewal of an existing materials license. The URP will prepare and send a letter to the applicant or licensee acknowledging receipt of the submission. Next, the Program Manager forwards the submission to the main staff reviewer for a Phase I Technical Review using the form in Appendix C (License Review Checklist). The Water Quality Division (WQD) Underground Injection Control Program (UIC) may also receive an application for a Class 1 Deep Disposal Well.

1. For new applications the Program Manager must confirm that the

application was accompanied by the appropriate application fee.

(c) If the submission is a renewal application, the URP must determine if it was filed in a timely manner. All licensees who send applications to the URP on time so that they are received at least 30 days before the expiration date are sent a letter acknowledging URP receipt of the license renewal. This letter states that the submission was filed in a timely manner.

Any licensee who does not send the license renewal in a timely manner receives a letter acknowledging URP receipt of the renewal, however this letter may also describe any stipulations or notices resulting from the late submittal. Please note that some renewal submissions may require enforcement action such as a Notice of Violation if the license being renewed is not brought into timely renewal

Next, the Program Manager forwards the submission to a staff reviewer for a Phase I Review.

(d) After the Phase I license review, the submission is sent to the staff peer reviewer for a Phase II quality assurance review. The reviewers of the application may request additional information (RAI) from the applicant to address concerns or inadequacy identified in the application. Efforts will be made to consolidate this request into one document sent out to the licensee. The technical review is deemed complete once the RAI's have been resolved.

(e) After completion of the Phase I and Phase II license reviews, the staff reviewers create a draft license along with a State Decision Document that explains why the State is justified in issuing a license. Both documents are routed to the Program Manager for supervisory review of all significant licensing actions. The Licensing Review Checklist is used for the supervisory review.

(f) Upon approval of the Program Manager, the draft license is forwarded to the Land Quality Division Administrator for review and signature as an official license issuance or amendment.

(g) The Office Support Specialist logs the action in the program tracking log, photocopies/electronically scans the license, and distributes a file copy and/or electronic copy to the licensing staff.

(h) The file copies are placed in the licensee's file folder and a letter notifying the applicant of the final licensing action is signed by the Program Manager. A hard copy and electronic copy of the license and State Decision Document are also forwarded to the applicant. Electronic copies of the license shall be stored on the URP electronic protected network drive.

3.2 Assessment of Applicant’s Facilities, Safety, and Managerial Controls

The license reviewers must assess the applicant's facilities and safety equipment, training, and experience in the use of the materials for the purpose requested, and proposed managerial controls. This may require inspections prior to the issuance of a license.

3.3 Security Requirements for Licensed Materials

Inspections conducted throughout the life of a facility shall assess that contaminated material at

licensed and unlicensed sites is secured and controlled. Containers of contaminated materials shall be labeled in accordance with URP rules and regulations. Contaminated materials in buildings shall be secured and controlled by locking buildings, rooms, or areas. Contaminated materials in outside areas shall be secured and controlled by fencing or soil covers. Eight-foot, cyclone-type fencing is generally acceptable. Other fencing types, such as barbed wire fences, may be sufficient in low population, rural areas. Barriers over tailings piles must conform to 10 CFR 40 Appendix A requirements for engineered barriers. Access to buildings, rooms, or indoor and outdoor areas having contaminated materials shall be limited only to individuals having the licensee's or responsible party's permission for access.

3.4 Information Exchange Between Inspection and Licensing Staff

The structure of the URP is such that qualified staff who are responsible for reviewing license applications will be qualified for both inspection and licensing duties within the program, thus eliminating the need for separate inspectors and licensing staff. On an as-needed basis, staff may be responsible for reviewing specific sections of licenses, and for conducting specific inspections that suit their specialty (e.g. geology, engineering controls, health physics, etc.).

3.5 Qualifications of License Reviewers

The URP has a staff qualification plan which covers both license inspectors and license reviewers. The plan is titled "4.6.2. Formal Qualification Plan", and the plan may be found in Section 4.6, *Technical Staffing and Training Program Elements* of the Agreement State Application. Upon completion of the plan, the staff will be qualified to review licenses for the URP.

3.6 Places and Conditions of Storage

License reviewers should review environmental considerations, security against unauthorized removal of licensed materials, and the safety equipment employed at the facility storage areas.

3.7 Places and Conditions of Use

License reviewers should review environmental considerations, security against unauthorized removal of licensed materials, and the safety equipment with areas of use within the licensed facility. The following items should be reviewed relative to the areas of use at the facility:

1. Qualification of users;
2. Licensee operating and emergency procedures;
3. Appropriate surveys;
4. Personnel monitoring under the close supervision of technically qualified individuals; and
5. Preparations for transport

3.8 New License Applications

(a) Using an appropriate review checklist (see Appendix C), confirm that operating and emergency procedures are adequate and that all items on the application are complete:

1. Application signed and dated by applicant's management;
2. Application meets the technical requirements contained in URP Chapter 4 and LQD Guideline 4;
3. Radiation Safety Officer (RSO) designated and has adequate training;
4. Place of use is authorized; surveys and environmental factors addressed if appropriate;
5. Waste disposal, survey documentation and procedures are adequate;
6. Instrumentation and calibration adequate;
7. Licensed materials: quantity, form, use, handling and packaging designated with adequate procedures; and
8. Other conditions: bioassay, maintenance, distribution, etc.

(b) Confirm that all financial assurance documents have been received and are being processed and approved through the WDEQ Administration Division. The URP cannot issue a new license without payment.

(c) Scheduled pre-licensing visit with the operator.

(d) New licenses should be issued in a timely manner.

(e) All staff involved in review and processing of the application should sign off on the tracking summary sheet in Appendix E.

(f) Coordinate with the different divisions within WDEQ, including LQD, Solid and Hazardous Waste Division (SHWD), Air Quality Division (AQD), and WQD for their concerns with the license application and any aspects of their programs which will be impacted by the license application, including permit forms, reclamation, waste management, injection well and monitor well abandonment, etc.

3.9 Renewal Applications.

(a) Renewal applications should be complete, stand-alone applications. Using an appropriate review checklist, confirm that operating and emergency procedures are adequate and that all items on the application are complete:

1. Application signed and dated by licensee's management;
2. The Permit/License application reflects current operations;
3. The renewal incorporates changes to industrial standards codified in the regulations;
4. Incorporation of operational data to accurately set design objectives;
5. RSOs are designated and their training is adequate;
6. Place of use authorized; surveys and environmental factors are addressed if appropriate;

7. Waste disposal, survey, if licensed materials handling and packaging procedures have changed, that documentation and procedures are adequate.
8. Instrumentation and calibration are adequate;
9. Licensed material: quantity, form, use are designated with adequate procedures;
10. Other conditions: bioassay, maintenance, distribution, etc.

(c) If the renewal application is a major change in the License Type, confirm that all financial assurance aspects of the change have been cleared through the Program Manager and the WDEQ Administration Division.

(d) Renewal licenses should be issued in a timely manner.

(e) All involved in review and processing of an application should sign off on the tracking summary sheet.

(f) Coordinate with the different divisions within WDEQ, including LQD, SHWD, AQD, and WQD for their concerns with amendments to the license and any aspects of their programs which will be impacted by the license amendment, including permit forms, reclamation, waste management, injection well and monitor well abandonment, etc.

3.10 Amendment Requests.

(a) Review amendment request carefully. Confirm that:

1. Training documents are complete and adequate;
2. If place of authorized use has changed, that surveys and environmental factors are addressed if appropriate; state should verify when appropriate;
3 Waste disposal, survey, if licensed materials handling and packaging procedures have changed, that documentation and procedures are adequate.
4. If instrumentation and calibration request is made, that procedures are adequate.

(b) If the amendment is a major change in the License Type, confirm that all financial assurance aspects of the change have been cleared through the Program Manager and the WDEQ Administration Division.

(c) Amendments should be issued in a timely manner.

(d) All staff involved in the review and processing of an amendment request should sign off on the tracking sheet

(e) Coordinate with the different divisions within WDEQ, including LQD, SHWD, AQD, and WQD for their concerns with amendments to the license and any aspects of their programs which will be impacted by the license amendment, including permit forms, reclamation, waste management, injection well and monitor well abandonment, etc.

3.11 Procedure for Termination of Licenses.

(a) General documents needed:

1. Termination process is in accordance with NRC document SA-900;
2. Written request for termination;
3. Copies of licensed materials transfers, licensee closeout surveys, qualified signatures and dates, instrument records including calibration records and dates, maps, diagrams of surveys;
4. Statement of how decontamination criteria in 10 CFR 40 Appendix A have been met;
5. Most current license and any previous licenses if available, with any amendments or revisions;
6. Check for amendments deleting previously authorized materials and their disposition;
7. Cross check with termination request. Is everything accounted for?;
8. Check for any unusual conditions within the previous amendments or revisions;
9. Completion Review Report (CRR) per SA-900 and as described below in (f); and
10. Description of long-term boundary care and institutional controls.

(b) Inspection reports:

1. Recent and historical inspection reports as far back as possible;
2. Check and cross check with license and with termination request regarding relocations and licensed materials;
3. Check for indication/citation of unauthorized use, disposal, spills, incidents, losses, or transportation of licensed materials. Is there a poor compliance history?;
4. Obtain recent and historical correspondence; and
5. Review reports of incidents and losses.

(c) URP close-out surveys/inspections:

1. Reference recent and historical site maps and reports;
2. Surveys of some points evaluated by licensee;
3. Surveys where contamination could be expected (restricted areas);
4. Surveys for contamination where none should have occurred (unrestricted areas, soils, drains, sewers, lobbies, offices, homes);
5. Records stating decontamination criteria (10 CFR 40 App. A) for URP, including instrumentation used and calibration records, including

disposition/transfer of licensed materials and inventories, record of the personnel who did the surveys;

6. Review of disposition of licensed material and radioactive wastes generated by the licensee, including liquid and solid wastes; and
7. Review of decontamination activities, including personnel exposures and monitoring records, bioassay records, effluent records.

(d) Other involved parties:

1. In cases of the transfer of licensed materials, verify recipients were both authorized for receipt of licensed materials and that they received the licensed materials;
2. Discuss with other staff reviewer's previous conversations with operators, phone calls, and other historical occurrences at the facility;
3. Find operator personnel who have institutional knowledge of facility history; and
4. See (f) below for coordination with NRC and DOE.

(e) Miscellaneous

1. Upon transfer of licensed materials to out-of-state licensees, call NRC or State radiation control program to verify recipient is properly licensed and to request verification that licensed materials were received;
2. Be thorough and complete, as this is the last opportunity to review the licensee and operation prior to termination of the license; and
3. Coordinate with the different divisions within WDEQ, including LQD, SHWD, AQD, and WQD for their concerns with amendments to the license and any aspects of their programs which will be impacted by the license amendment, including permit forms, reclamation, waste management, injection well and monitor well abandonment, etc.

(f) Coordination with NRC for decommissioning and termination of licenses

1. Contact NRC early-on in the license termination process. DOE should also be contacted if the facility is a conventional facility. Please note that there are differences detailed in SA-900 with respect to handling license termination at conventional versus ISR facilities. There are also slight differences in NRC guidance between full and partial site releases/decommissioning scenarios;

2. Submit a draft CRR to the NRC for NRC review and comment. Provide notice to the NRC at least one month before submitting the CRR to the NRC. The CRR should contain the following per SA-900, Appendix C:

a. Summary.

b. Documentation of Bases for Conclusion:

i. A brief description of licensee's activities associated with decommissioning and license termination.

ii. Groundwater information which demonstrates that the groundwater has been adequately restored to meet applicable standards and requirements.

iii. Documentation that the production, injection and monitoring wells have been closed and plugged in accordance with applicable standards and requirements.

iv. Decommissioning information which documents that all radiologically contaminated materials have been properly disposed of, transferred to licensee(s) authorized to possess such materials, or meet applicable standards and requirements for release.

v. Discussion of the results of radiation surveys and soil sample analyses which confirm that the licensed site meets applicable standards (10 C.F.R 40 App A) and requirements for release.

vi. Discussion of results of the States site closure inspection(s).

vii. For partial terminations, documentation that release of a portion of the site will not negatively impact the remainder of the site to be closed at a later date.

c. References;

3. NRC will provide a review letter to the URP documenting the results of their review as to whether or not all applicable standards and requirements have been met. The URP will address NRC's comments and amend the draft CRR as appropriate;

4. Final CRR is submitted to NRC;

5. The URP will provide NRC with comments in regards to the Long-Term Surveillance Plan and the Long Term Surveillance Boundary;

6. NRC will make a determination for both partial and entire license terminations at a site. NRC will formally notify the URP of its determination(s); and

7. The URP will terminate the specific license or will amend the license to remove the remediated or unaffected portion from the license if the license is being partially terminated.

3.12 Expired License Policy and Procedure.

(a) Expiration of licenses is regulated under Chapter 4, Section 11 of the URP Rules and Regulations, *Licensing Requirements for Source and Byproduct Material*.

(b) If the licensee does not submit a request for termination or renewal of the license thirty (30) days in advance of the license expiration date, a letter from the URP to the licensee should be sent as a reminder of the expiration date of the license.

(c) The issuance of a new license number when the original license has passed its

term date will be reviewed on a case-by-case basis.

(d) Per URP Rules and Regulations, Chapter 2, Section 5 (*Inspections, Enforcement, and Penalties*), the URP may issue a Notice of Violation on a case by case basis for delays in the processing or submission of license renewal or termination documentation to the URP.

(e) In the event that a license expires, the following procedures should be followed:

1. If the licensee never acquired licensed material, the URP will request a written statement that material was never acquired and that final termination of the license is requested.

2. If the licensee already disposed of the licensed material, the URP will request written documentation as to the appropriate disposition of the licensed material, a statement as to the retention of all required records. and of the licensed a formal request to terminate the license. Until the license can be terminated the licensee must maintain compliance with the expired license.

3. If the licensee currently possesses licensed material and does not plan to renew the license, the URP may issue a Notice of Violation for possession of licensed material without a valid licensed material license. The licensee should be informed of the need to dispose of the material to an authorized recipient. The URP should also request written documentation as to the appropriate disposition of the licensed material, a statement as to the retention of all required records, and a formal request to terminate the license. The licensee is still held to the conditions of the expired license.

4. If the licensee currently possesses licensed material and plans to renew the license, the URP may issue a Notice of Violation for possession of licensed material without a valid license. A request for the renewal application updates will be made and the licensee will be required to ask for an extension describing when the application will be received by the Department. The licensee must maintain compliance to the conditions outlined in the expired license.

5. If the licensee currently possesses licensed material and has submitted an application to renew the license, URP will review the request, and until final URP ruling the conditions in the expired license will continue in effect until license renewal.

(f) Coordinate with the WDEQ LQD, SHWD, AQD and WQD to determine if the other divisions have any concerns with respect to their individual permits related to the facility.

4.0 Decommissioning of Facilities and Equipment

4.1 Scope of Decommissioning

Decommissioning is the process of removing a facility or site safely from service and reducing residual radioactivity to a level that permits either the release of the property for unrestricted use, or release of the property under restricted conditions. For licensed facilities or sites, decommissioning includes termination of the license or amending the license to remove the facility or site as a location of use from the license. Additionally the URP will inform the appropriate land owners that the facility or site is released for unrestricted use.

Any separate building or area that has not been used for two years must be promptly remediated or the licensee must submit within one year of the two year inactivity date for Department review and approval a decommissioning plan showing the time frame of reclamation. The decommissioning process is to be completed within two years from the submittal of the decommissioning plan, unless an alternative schedule is approved in the decommissioning plan. The licensee may postpone reclamation after approval from the Department that postponement would not cause undue risk or harm to the public or environment, and that postponing reclamation may provide some future benefit.

4.2 Decommissioning Plan

A decommissioning plan is a detailed description of the activities that the licensee intends to use to assess the radiological status of its facility, to remove radioactivity attributable to licensed operations at its facility to levels that permit release of the site in accordance with URP regulations and termination of the license, and to demonstrate that the facility meets URP requirements for release. The objective of the decommissioning plan is to describe the activities and procedures that a licensee intends to undertake to remove residual radioactive material attributable to licensed activities at the facility to levels that meet URP criteria in sufficient detail to allow URP staff to determine whether decontamination of the facility can be accomplished safely. To the extent that licensed material is mingled with elevated (i.e., above background levels) naturally occurring radioactive material (NORM), the elevated NORM is also remediated in decommissioning.

The dose based criteria for termination of a license are located in Criterion 6 of Appendix A of 10 C.F.R Part 40.

Components of the Decommissioning Plan:

The applicant must address the components of Section 6.0 in NUREG-1569, or applicable sections of NUREG-1620 in the development of their decommissioning plan. The reviewer(s) will use NUREG-1569, elements of NUREG- 1757, NUREG-1727, NUREG-1620, and the checklist contained in Appendix D, as applicable, for a completeness evaluation of the applicant's Decommissioning Plan. Further technical review will be required to be completed by knowledgeable staff or subject matter experts.

(a) Site Characterization: URP requirements for decommissioning require that proposed decommissioning plans include a description of the conditions of the site or separate building or outdoor area sufficient to evaluate the acceptability of

the plan. Licensees can develop this information using institutional knowledge about radioactive material use at their facility, by performing a site characterization survey, or by a combination of these methods. Some licensees may require heightened attention by URP staff during characterization planning. For these licensees it may be appropriate for URP staff to meet with the licensee prior to, or during, site characterization. The applicant's decommissioning plan will address the characterization of impacted and potentially-impacted groundwater, soils, surface waters, and sediments.

(b) Remediation Plan. URP rules and regulations require a licensee to meet decommissioning requirements of 10 CFR Part 40 Appendix A prior to requesting license termination. Licensees that do not meet those requirements will not be allowed license termination by the State or by the NRC. The NRC must concur with any URP findings prior to license termination. The remediation plan will consist of several components, including a description of the remediation tasks, a health and safety plan, and a quality assurance plan. The applicant must demonstrate:

1) The development of remediation goals;
2) Remediation plans; and
3) Verification techniques which are applicable to the environmental media, i.e. soil and groundwater, required to meet the license termination standards set forth in 10 CFR Part 40 Appendix A.

(c) Decommissioning Funding Plan : URP rules and regulations (Chapter 6, *Financial Assurance*) specify the requirements for licensees to provide financial assurance. Financial assurance must cover the proper disposal of any wastes remaining on-site, including hazardous wastes. Financial assurance will also address building decontamination, soil remediation, groundwater remediation, and other components addressed in the remediation plan. The applicant must maintain a financial surety to cover potential restoration costs in the event that monitoring results are contrary to model predictions and groundwater restoration must be initiated. The applicant must maintain financial surety reflecting all of the costs necessary to carry out all required decommissioning activities prior to license termination and, if the license is being terminated as an UMTRCA Title II site, to enable the State, or the Department of Energy, to assume and carry out responsibilities for any necessary control and maintenance of the site.

(d) Final Status Survey Plans: Licensees wishing to terminate their licenses must demonstrate to the URP that residual radioactive material at their facility attributable to past licensed operations does not exceed URP criteria for release of the facility. URP regulations require that all decommissioning plans contain a description of the planned final radiation survey to demonstrate that the facility meets URP's criteria for release and termination of the license.

4.3 Decommissioning Records Management

During licensed operations the URP requires licensees to maintain records important to safe and effective decommissioning. For licensees who must submit a decommissioning plan, these records

should subsequently be used to develop the site-specific portion of the decommissioning plan. Following decommissioning and before license termination, additional URP regulations prescribe the disposition of these records, in most cases to the URP or NRC. Finally, URP staff is responsible for maintaining decommissioning records following license termination.

4.4 Decommissioning License Termination

The final action required by the licensee after completion of remediation and adequate demonstration that the facility is suitable for release in accordance with URP requirements is the written request to terminate the license. If the licensee has satisfied all of the conditions for remediating its site as outlined in the decommissioning plan, reclamation plan, or other commitments, URP staff will develop the CRR for NRC review and concurrence. Once the CRR is approved the State will terminate the license.

For sites with non-radiological contamination, URP should inform the other State agencies or divisions that may have jurisdiction over any hazardous chemical contamination (WDEQ Solid and Hazardous Waste Division) and the U.S. Environmental Protection Agency (EPA) about the intent to terminate the license. In addition, the termination is intended as a final agency action and should include appropriate language in the termination letter to reflect this intent. Please see also Section 3.11, *Procedure for Termination of Licenses* in this manual.

4.5 Decommissioning Restricted Use Criteria

URP staff will review the information supplied by the licensee to determine if the description of the activities undertaken by the licensee is adequate to allow the staff to conclude that the licensee has complied with the applicable requirements of 10 C.F.R Part 40, Appendix A for those licensees who intend to request termination of their radioactive materials licenses. The basic dose-based requirement for license termination for land areas is Criterion 6 of Appendix A of 10 C.F.R Part 40. After the URP has determined standards are met, URP will develop the CRR to be sent to the NRC for concurrence. The CRR will be developed in accordance with NRC document SA-900. Once concurrence from the NRC is achieved, including for Title II sites acceptance of the Long Term Surveillance Plan (LTSP) and the Long Term Care Fee by the NRC, the license will be terminated.

4.6 Partial Site Decommissioning

A licensee who has submitted a decommissioning plan that has not yet been approved or a licensee who has an approved decommissioning plan may opt to release a portion of its site early. For the case of partial site release, the licensee must submit a request for a license amendment to the extent that the actions are not described in the decommissioning plan. A site enters into partial site decommissioning in one of two ways: the licensee requests that a portion of its facility be removed from the license, or a licensed facility is required to begin decommissioning a portion of its facility.

Please note that the NRC must be contacted for partial site releases per SA-900. Procedures for development of the Completion Review Report submitted to the NRC and procedures for obtaining NRC determinations regarding partial site decommissioning and releases are provided in Section 3.11(f) of this manual.

4.7 Decommissioning Inspection Program

(a) The purpose of the decommissioning inspection program is to ensure the following:

1. The licensee documents are adequately implemented, maintained, and reflect the status of decommissioning;

2. Licensee activities, organization, and controls are effective to provide reasonable assurance that decommissioning can be conducted safely and in accordance with regulatory requirements;

3. URP staff project oversight and inspection resources are effective, consistent, and appropriately focused; and

4. Licensee radiation and radioactivity measurement programs provide accurate quantification and classification of radioactivity.

(b) Timing and Frequency of Decommissioning Inspections: The decommissioning inspection program is formally initiated when the licensee is required to begin decommissioning under URP regulations. The inspection program continues until the site, including all buildings and other structures and outdoor areas, are remediated in accordance with URP requirements and the appropriate licensing action is completed, which could be license termination or amendment, or documentation the site is being released for unrestricted use if it is a non-licensed entity.

The frequency of inspections will vary depending on the decommissioning activities taking place. In determining the inspection frequency, the URP should factor in the radiological history of the licensee, the licensee's past performance, the licensee's planned schedule of activities, the potential for the decommissioning activities to affect the health and safety of workers and the public, and the level of public interest. Inspections should be scheduled to allow the inspector to observe, at a minimum, all significant decommissioning activities. Inspection of significant activities can include activities such as: remediation of wells, structures, soils, surface water or groundwater; observing the removal or dismantlement of equipment that possess a high source term; conducting confirmatory measurements that coincide with the licensee's surveying activities, particularly for situations where no other reasonable opportunity will exist; verifying licensee compliance with license commitments, decommissioning plans, regulatory requirements, or procedures; following up on previously identified violations or other identified weaknesses; evaluating performance following a significant change in the licensee or contractor work force; a routine inspection prior to an upcoming public meeting or; a special inspection to address public concerns.

Some sites have separate buildings and outdoor areas where licensed activities have ceased and are being decommissioned, while licensed activities continue to be conducted at other site locations. In these cases, inspections of the locations being decommissioned can be coordinated with inspections of routine operations or they may be performed independent of operations at the discretion of the inspection staff.

At least one inspection should be conducted while the site is being characterized for major decommissioning efforts that involve large quantities of contaminated soil, groundwater

contamination, onsite disposal, extensive surface contamination, dismantlement of major buildings and structures, or the potential for significant worker or public exposures. For such major efforts, the inspection schedule should also include an inspection during remediation of key buildings, equipment, outdoor areas, and during and after the licensee's final survey. In general, inspections may be conducted more frequently if necessary to verify that work and public exposures are maintained as low as is reasonably achievable (ALARA).

(c) Extent of Licensee Decommissioning Activities: When a licensee is able to use existing approved procedures to perform decommissioning activities, the inspector should be able to perform inspections using the same routine inspection procedures that were used during operational inspections (see Section 4.4, URP *Inspection Procedures*).

(d) Security and Control of Contaminated Material: Inspections conducted throughout decommissioning shall continue to assess that contaminated material at licensed and unlicensed sites undergoing decommissioning is secured and controlled. Containers of contaminated materials shall be labeled in accordance with URP rules and regulations. Contaminated materials in buildings shall be secured and controlled by locking buildings, rooms, or areas. Contaminated materials in outside areas shall be secured and controlled by fencing or soil covers. Eight-foot, cyclone-type fencing is generally acceptable. Other fencing types, such as barbed wire fences, may be sufficient in low population, rural areas. Barriers over tailings piles must conform to 10 CFR 40 Appendix A requirements for engineered barriers. Access to buildings, rooms, or indoor and outdoor areas having contaminated materials shall be limited only to individuals having the licensee's or responsible party's permission for access.

(e) Decommissioning Inspection Coordination: Prior to performing inspections at a site undergoing decommissioning, the URP should coordinate inspection activities, as appropriate, with the licensee, relevant Federal, State and other organizations interested in or affected by site activities. The SHWD will also be consulted if the decommissioning involves hazardous wastes.

(f) Decommissioning Environmental Concerns: Inspectors should review environmental data related to airborne and liquid effluent releases and groundwater sampling for compliance with URP standards and requirements. Groundwater monitoring should be performed at sites with substantial volumes of contaminated soils, known groundwater impacts, or onsite disposal areas. If groundwater concentrations exceed the EPA National Primary Drinking Water Regulations (40 C.F.R Part 141), URP hydrological staff should be consulted to evaluate the significance of the groundwater contamination and the need for further groundwater monitoring programs.

(g) Decommissioning Health Concerns: Inspections shall be conducted with reference to URP rules and regulations, approved decommissioning plans, and license conditions for key decommissioning activities that are important for health and safety. The major health concerns may include: essential systems and services, radiation protection for workers, environmental programs related to possible offsite releases of radioactive materials, fire protection, onsite waste management prior to offsite disposition, transportation of radioactive wastes for disposal, corrective action program, in-process confirmatory surveys and implementation of a licensee quality assurance program carried on throughout the decommissioning process.

(h) Scope of Decommissioning Inspections After Remediation: Decommissioning activities after remediation of the site include a licensee-conducted final status survey and in some cases, a URP confirmatory survey.

1. Licensee Final Status Survey: As part of the decommissioning plan, the licensee will prepare a final status survey. The purpose of the final status survey will be to demonstrate compliance with the URP decommissioning criteria. The final status survey should include the licensed premises and offsite areas that were, or may have been, contaminated by the licensee's operations. The licensee's final status survey is reviewed by the URP and signed by the administrator of LQD. It is recommended that inspectors have adequate familiarity with these licensee documents to facilitate planning and executing inspections. Depending on the adequacy of the surveys conducted, the quality of the final status survey report, the licensee's history of use, the contaminants present, whether there were documented past spills, etc., the inspector must determine whether a URP confirmatory inspection would be appropriate. If an inspection can be conducted during the licensee's final status survey (during which side-by-side surveys can be conducted) the need for a confirmatory inspection would in most cases be eliminated. However, many licensees have completed the final status survey prior to informing the URP of the desire to release the areas for unrestricted use, so this is not always possible.

2. Confirmatory Surveys: The purpose of the URP confirmatory survey is to perform an audit of the licensee's final status survey results to independently confirm that the licensee's final status survey report is accurate, representative of site conditions, and meets decommissioning criteria. In most cases a comprehensive confirmatory survey will be performed following the decommissioning of a uranium recovery facility. However, based on the frequency, types, and results of in-process inspections, URP management may decide that a confirmatory inspection is not necessary. Examples where a confirmatory survey would almost always be conducted would include: (1) an in-process inspection of the licensee's final status survey program has identified multiple weaknesses; (2) repetitive violations are identified during the decommissioning process; (3) significant public or legislative interest exists; or (4) in-process inspections were not conducted.

URP confirmatory surveys should not be used to demonstrate (for the licensee) compliance with

URP residual contamination standards. The licensee always retains responsibility for compliance. The licensee's final survey plan and report should be adequate to demonstrate the condition of the site before any confirmatory survey is conducted by the URP. Licensee surveys and URP confirmatory surveys may be conducted in phases as decommissioning proceeds.

Prior to arranging a confirmatory survey, the inspector should review the documentation of decommissioning activities and the results of the licensee's final radiological survey. Any questions or concerns that the inspector might have concerning the survey should be communicated to the licensee for substantiation or clarification. When such issues are resolved to the inspection staff's satisfaction, a written confirmatory survey plan should be prepared, and the survey conducted at the earliest possible date.

The Department may consult with contractors to perform the confirmatory survey when (1) the licensee's final survey involves unique or complex technical issues (2) the confirmatory survey is expected to require significant resources to complete field surveys and sampling, or (3) the confirmatory survey is a very high priority that cannot be completed by URP staff in a timely

manner. Contractor quality assurance plans will be approved before contracted services can begin. When selecting contractors and laboratories, the URP will select only contractors and laboratories that are able to meet the data quality objectives (DQOs) of the project.

5.0 Procedures for Conducting the Evaluation of a Regulatory Program for 11e.(2) Byproduct Material including Uranium or Thorium Milling Facilities

Wyoming administers the regulation of 11e.(2) byproduct material through the URP, which is part of WDEQ's Land Quality Division. The technical licensing procedures for evaluations and inspections for 11e.(2) byproduct material is the same as those for source material licensed in the State. The resources available to the program and qualifications of the personnel performing evaluations are detailed in Section 4.1.2, *Organization of the Program*, Agreement State Application. Wyoming's inspection procedures are detailed in Section 4.4 of the URP, *Inspection Procedures*.

6.0 Procedures for Assuring the Technical Quality of Licenses.

The quality assurance for licensing actions involves training of staff, use of appropriate procedures, and supervisory review of work performed. Quality review of licensing applications takes precedence over arbitrary completion deadlines. Supervisory review of all actions is required. Each reviewer will complete a Licensing QA Review Summary Sheet (see Appendix A) and License Review Checklist (Appendix B) during each licensing action.

(a) To determine the technical quality of licensing actions, the following should be evaluated:

1. Technical correctness with regard to license conditions, issue and expiration dates, and nomenclature;
2. Application must be properly completed and signed by applicant's management;
3. Any significant errors, omissions, deficiencies, or missing information in licensing action files should be noted (i.e. documents, letters, file notes, and telephone conversations). Licenses should be properly supported by information in the file. Any significant deficiencies related to health and safety should be documented, discussed with the Program Manager, and communicated to the applicant.
4. Improper and/or illegal license authorizations: Any variances/exceptions to standards should receive management approval and not undermine health and safety;
5. Appropriate financial assurance instruments are in place for licenses authorizing possession of licensed material;
6. Any pre-licensing visits are completed for complex and major licensing actions;
7. Licenses should be reviewed prior to renewal to assure that supporting information in the file reflects the current scope of the licensed program. Licensing guides, checklists, and policy memoranda must be consistent with current NRC and URP practice;
8. Appropriate use of signature authority;
9. Consideration of the present compliance status of licensees during reviews

of licensing actions.

10. Use of standard license conditions to expedite and provide uniformity to the licensing process, whenever practicable;
11. Verification of specific "tie-down" license conditions; and
12. Implementation of licensing initiatives, in particular the reviewer should identify these initiatives for a performance-based review.

(b) Secondary Review of License Applications.

A secondary review of license applications (see the Licensing QA Review Summary Sheet, Appendix A and License Review Checklist, Appendix B) will be conducted by other qualified URP peer review staff for quality assurance purposes. The secondary peer reviews can be used to evaluate the completeness of initial reviews of license applications. After completions of the staff reviews of license applications, the URP Program Manager will also review the license application for completeness, quality, and content.

If the initial and secondary peer reviews indicate a systematic weakness on the part of one reviewer or problems with respect to one or more type(s) of licensing action(s), additional similar license files should be obtained and reviewed, in order to determine the magnitude of the programmatic weakness and its root cause. If previous reviews indicate a programmatic weakness in a particular area, additional casework in that area should be reviewed to assure that the weakness has been addressed.

7.0 Transfer of NRC Licenses to the State of Wyoming URP

(a) Upon completion of the Agreement, all NRC licenses involving uranium recovery will be recognized and be automatically transferred to the State. Once those licenses are amended or renewed the State will issue a license in accordance with the URP program.

(b) A new license number, if appropriate, an expiration date will be included. The document will contain the following statements:

> "This license authorizes receipt, acquisition, possession, and transfer of byproduct and source material; the authorized use(s), purposes, and the places of use as designated on the NRC license. The licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed in the NRC license. The Wyoming Department of Environmental Quality Rules and Regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the rules."

(c) Electronic copies of the licenses shall be stored on the URP electronic protected network drive, and hard copies of licenses shall be stored in a file cabinet in a secured area within the main URP office.

(d) The URP will coordinate with NRC to determine an appropriate process and timeline for handling the transfer of licenses according to NRC guidance. This coordination with NRC will include the following: transfer of active inspection files, active licensing files, licenses in the renewal process, licenses in the application process, and expired licenses that have not yet been closed out.

CERTIFICATE OF DISPOSITION OF MATERIALS

PLEASE READ THESE INSTRUCTIONS BEFORE
COMPLETING URP FORM 314.

10 CFR 40 Appendix A establishes the radiological criteria for license terminations/decommissioning of facilities licensed under 10 CFR Parts 40, as well as other facilities subject to the Departments jurisdiction under an Agreement with the NRC in accordance with Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, as amended.

INSTRUCTIONS

Section B, Item 2.
Licensees should describe the specific radioactive material transfer actions. If radioactive wastes were generated in terminating this license, the licensee should describe the disposal actions taken.

Section B, Item 2.a.
The information provided concerning the transfer of radioactive material to another licensee should specify the date of the transfer, the name of the licensee recipient, an individual contact name and telephone number for the licensee recipient, and the recipient's NRC or Agreement State license number.

Section B, Item 2.b.
For disposal of radioactive materials, licensees should describe the specific disposal method or procedure (e.g., decay-in-storage). For those cases when radioactive materials are disposed of by a licensed disposal site or by a waste contractor, the licensee should specify the name, address, and telephone number of the licensed disposal site operator or waste contractor.

Section B, Item 2.c.
"Residual radioactivity," as defined in 10 CFR 20.1003, means radioactivity in ‘areas' (structures, materials, soils, etc.) remaining as a result of activities (licensed and unlicensed) under the licensee's control from sources used by the licensee, excluding background radiation. ALARA is defined in 10 CFR 20.1003.

RETURN FORM TO :

Wyoming Department of Environmental Quality
Division of Land Quality / Uranium Recovery Program
200 W. 17th Street Lower Level
Cheyenne Wyoming, 82002.

CERTIFICATE: DISPOSITION OF RADIOACTIVE Wyoming Department of Environmental Quality Land Quality / Uranium Recovery Program	Draft URP Form- 314 Revision No: 1 Effective Date 05/18/16

LICENSEE NAME AND ADDRESS	LICENSE NUMBER	DOCKET NUMBER
	LICENSE EXPIRATION DATE	

A. LICENSE STATUS (Check the appropriate box)

☐ This license has expired. ☐ This license has not yet expired; please terminate it.

B. DISPOSAL OF RADIOACTIVE MATERIAL

(Check the appropriate boxes and complete as necessary. If additional space is needed, provide attachments)

The licensee, or any individual executing this certificate on behalf of the licensee, certifies that:

☐ 1. No radioactive materials have ever been procured or possessed by the licensee under this license.

☐ 2. All activities authorized by this license have ceased, and all radioactive materials procured and/or possessed by the licensee under this license number cited above have been disposed of in the following manner.

☐ a. Transfer of radioactive materials to the licensee listed below:

☐ b. Disposal of radioactive materials:

☐ 1. Directly by the licensee:

☐ 2. By licensed disposal site:

☐ 3. By waste contractor:

☐ c. Remediation has occurred such that any remaining residual radioactivity is within the limits of 10 CFR 40 Appendix A criteria, or another URP approved criteria equivalent to, or more restrictive than, the 10 CFR 40 Appendix A criteria.

C. SURVEYS PERFORMED AND REPORTED

☐ 1. A radiation survey was conducted by the licensee. The survey confirms:

☐ a. the absence of licensed radioactive materials

☐ b. that any remaining residual radioactivity is within the limits of 10 CFR 40, Appendix A, and is ALARA.

☐ 2. A copy of the radiation survey results:

☐ a. is attached; or ☐ b. is not attached (Provide explanation); or ☐ c. was forwarded to URP on: _____ Date

The person to be contacted regarding the information provided on this form:

NAME	TITLE	TELEPHONE *(Include Area Code)*	E-MAIL ADDRESS

Mail all future correspondence regarding this license to:

C. CERTIFYING OFFICIAL

I CERTIFY UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT

PRINTED NAME AND TITLE	SIGNATURE	DATE

WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. URP REGULATIONS REQUIRE THAT SUBMISSIONS TO THE URP BE COMPLETE AND ACCURATE IN ALL MATERIAL RESPECT. 18 U.S.C. SECTION 1001 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

Appendix B to Subsection 4.3
Guideline 4 In Situ Mining

Department of Environmental Quality

WYOMING

DEPARTMENT OF ENVIRONMENTAL QUALITY
LAND QUALITY DIVISION

GUIDELINE NO. 4

IN SITU MINING

NONCOAL

(Revision Date: August 14, 2017)

GUIDELINE No. 4
IN SITU MINING – NONCOAL

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Reference Documents

I. Introduction

This document is a guideline only. Its contents are not to be interpreted by applicants, operators, or Wyoming Department of Environmental Quality (DEQ) Land Quality Division (LQD) staff as mandatory. The exception is where clear statutory or regulatory requirements are included. These requirements are designated by the use of words such as 'must', 'shall' and 'required'. Its preparation is the result of numerous requests from applicants and operators for guidance in preparation of a comprehensive application or amendment. If an operator wishes to pursue other alternatives, they are encouraged to discuss these alternatives with the LQD staff.

This guideline is intended to be comprehensive and all headings may not apply to all operators. While it is intended to cover all noncoal in situ operations, the focus is on in situ uranium. Any references to the Nuclear Regulatory Commission's (NRC) Nuclear Regulation 1569 (NUREG-1569) will only apply to in situ uranium operations. Applicants for other noncoal in situ minerals should review the Guideline and then discuss modifications or additional guidance with the LQD sections. Applicants for Research and Development Licenses should follow this Guideline unless different or additional information is requested or required by LQD. A table of contents is provided to direct the applicant to the appropriate topic for individual permitting needs. Several Reference Documents are also attached to this Guideline that provide additional information on their respective topics.

A. Definitions for Purpose of the Guideline

Attachment I of Reference Document 1, General Information, is a list of definitions that apply to in situ mining. It includes definitions from the Wyoming Environmental Quality Act (ACT), LQD Rules and Regulations (R&R), and some were developed to explain terms used in this guideline. If the definition is from the Act or LQD R&R, a citation is given. Any text after a citation was added to further explain how the term is used for in situ mining.

Applicants are strongly urged to use the preapplication process as described in Guideline No. 24. When used properly this process significantly reduces the time for permit review and lowers the level of frustration by all parties. Flowcharts of the agency's review process for both permit applications and new wellfield package revisions are provided in Attachment II of Reference Document1, General Information.

B. Supporting Documents

Prior to resource inventory or development of an in situ application, the applicant should review the following documents which can be obtained from the Land Quality Division website.

1. Wyoming Environmental Quality Act (as amended).

2. Land Quality Division NonCoal Rules and Regulations specifically Chapters 2, 3, 7, and 11.

3. Land Quality Division Uranium Recovery Program Rules and Regulations.

4. Water Quality Division Rules and Regulations, specifically Chapters 2, 3, and 8.

5. Land Quality Division Guidelines:

No. 1	Soil and Overburden
No. 2	Vegetation
No. 5	Wildlife
No. 6	Organization and topic outline for an Application for a Permit to Mine or an Amendment
No. 8	Hydrology
No. 10	Fencing
No. 11	Cultural Resources
No. 15	Alternate Sediment Control
No. 24	Preapplication Process for Permit Applications

C. Application Format and Organization

Attachment III of Reference Document 1, General Information, provides details regarding the number of copies, format, and a checklist of the permit application. The attachment contains a list of the major sections and subsections of the application such that it can be used as a checklist by the applicant.

D. Noncoal and URP Statute and Rule and Regulation Citations

Attachment VII of Reference Document 1, General Information, provides a reference to the various statutes and LQD Rules and Regulations for major sections of the permit application.

II. Permit Introduction

A. Permit Introduction

The applicant should provide a brief description of the proposed operation at the beginning of the application. This description should include the location, type of mining and processing that will occur, life of the operation, the size of the permit area, and the number of acres proposed to be affected.

B. Confidential Information

The applicant may request material that may be considered as trade secrets to be held confidential. The purpose of this section is to consolidate in the introduction all requests and justification for confidential information. The application should contain justification and demonstration to the Administrator that such information should be held confidential. The information will be held confidential until such time a decision is rendered by the Director in consultation with the Administrator. The decision will be made before the end of the Technical Review process. If LQD concurs that the information meets the criteria for being a trade secret, the information will be placed in a locked/restricted access. (See W.S. §35-11-1101)

III. Part I, Adjudication File and Appendix C - Permit to Mine (In Situ) and Research & Development License (In Situ)

The adjudication portion of the application is organized into a part that is submitted in loose form which will be filed into what LQD calls the File-1-Of and a second part that is submitted in 3-ring binders. Appendix C information is contained in both sections for ease of review. Reference Document 2, Adjudication, contains detailed instructions for organization and content of the adjudication file.

IV. Part II, Appendix D, Environmental Baseline Data

As stated in the title of this section, Appendix D **ONLY** contains baseline information. While the applicant is required to discuss and/or interpret the baseline, the applicant is **NOT** to include operational discussion or commitments in the appendix. The baseline information remains the same for the life of the operation but operation methods may change.

A. Appendix D-1, History and Land Use

This appendix should briefly describe the history of the permit as it relates to the regional historic setting particularly the impacts and uses of the land. This appendix may utilize and/or refer to useful elements of the cultural resource inventory for the permit area. This appendix should list, describe and map the historical and present land uses within the permit area. Include any lands that have been listed as rare or uncommon by the Wyoming Environmental Quality Council (EQC) or other lands that have mining restrictions or are designated off limits to mining by any federal agency. Use only the acceptable land use categories listed below. These land uses are defined in Attachment I of Reference Document 1, General Information.

- Cropland
- Pastureland
- Grazingland
- Forestry

- Residential
- Industrial commercial
- Recreational
- Fish and Wildlife Habitat
- Developed Surface Water Resources

Some land uses overlap especially natural resource uses such as oil and gas and coal bed methane development. These overlapping uses should be identified.

B. Appendix D-2

Appendix D-2
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C. Appendix D-3, Cultural and Paleontological Resources

1. A professionally conducted Level III pedestrian survey fulfilling the U.S. Secretary of Interior's Standards for Archaeology and Historic Preservation should be tabbed in this appendix but placed in a separate volume, so it can be filed separately under "restricted access".
2. The tabbed section of this appendix should briefly summarize the archaeological and paleontological resources of the permit and adjacent areas in a summary manner. The summary should not describe sites in detail or show their location.
3. For guidance in the preparation of Appendix D-3 please refer to LQD Guideline No. 11.

D. Appendix D-4, Climatology

This appendix shall include a description of climatic conditions of the site. The climatology report should be structured to include an introduction, methodology and equipment description, site analysis, representativeness of off-site stations, and recommended operational monitoring. Meteorological data should be presented in a graphic or tabular format as appropriate. Baseline data should include a minimum of 1 year of data collection, although it is recommended that additional available data be used to extend the monitoring period.

Data from the nearest official weather reporting station(s) may be used. However, if operations are more than 50 miles from an official weather station that is permanently staffed, or orographic effects preclude acceptable extrapolation of data, an on-site meteorological station ***may*** *be required. For uranium or thorium recovery facilities, the applicant should include any additional meteorological measurement program requirements found in NUREG 1569 Section 2.5.1. Additionally on-site meteorological data should be representative of long term site meteorological conditions.* A map and table including the locations of meteorological stations used in relation to the project should be provided.

1. Precipitation: (This information may be necessary for evapotranspiration assessment.)
   a. Average monthly and average total annual precipitation (in inches) for the proposed permit area.
   b. Precipitation depth (inches) for the 2-, 10-, 25-, 50-, and 100-year, and 1-, 6-, and 24-hour storm events.
   c. Any storm event precipitation data collected at the mine site should be presented. The most useful data would include continuous precipitation for each storm event, presented in intervals of ten minutes or less.

2. Wind: Submit the average monthly and yearly wind direction and velocity recorded at the nearest official weather station or as measured on site. Wind rose diagrams and frequency distribution charts are appropriate.

3. Temperature (recommended): Maximum, minimum, average monthly, and annual temperature for each representative meteorological station. Depending on model, temperature may be necessary for evapotranspiration assessment.

4. Additional recommended parameters for monitoring and analysis include heating and cooling degree-days, relative humidity, dew point, and barometric pressure. Note: At a minimum, barometric pressure measurements should be collected during aquifer pumping.

E. Appendix D-5, Hydrogeology

For in situ mining, the geology and groundwater hydrology are critical elements of the application and are interconnected. For in situ uranium mining and other in situ operations that include mining in a saturated zone, the groundwater portion will be combined with D-5, Geology and D-6 will only consist of surface water hydrology. Reference Document 3, Hydrogeology, contains the detailed information requirements for this section. Reference Document 10, Premining Water Quality and Quantity Sampling, provides instruction on sampling and analysis.

F. Appendix D-6, Surface Hydrology

For describing the baseline conditions of surface water quantity and features, the level of detail may be less than those of a surface mine. However, spills and other unanticipated conditions have the potential to impact surface water; therefore, some level of detail is required. Reference Document 5, Surface Water, of this guideline contains the information for this section. If the proposed operation will significantly impact surface water features, the applicant should consult LQD Guideline 8 and contact LQD for additional guidance.

G. Appendix D-7, Soils

In situ mines generally have less surface disturbance than conventional surface mines. Accordingly, LQD requires an Order 3 soils survey for the permit area with an order 1/2 soil survey and laboratory analysis for areas on affected lands. Additional detail on the baseline requirements for soils can be found in Reference Document 6, Topsoil and Subsoil Management and the Associated Erosion Control, and Temporary Seeding/Stabilization of Disturbed Areas, of this guideline.

H. Appendix D-8, Vegetation

A survey of vegetative cover and species diversity on the proposed affected land determined by scientifically acceptable sampling procedures, as described in Guideline 2, Vegetation will be required. Production sampling will not be required.

1. General Inventory Procedures for Baseline Measurements
   a. **All Sampling Plans Should Be Approved by LQD Prior to Implementation.** Other methods and types of baseline vegetation inventories may be acceptable if they meet or exceed the objectives of this guideline.

   b. Baseline Vegetation Map/Mapping

      i. Plant community mapping should extend ½ mile outside the permit area. All plant communities should be clearly delineated and labeled.

      ii. Delineate the extent and location of each Reference Area (REFA), if applicable.

      iii. Delineate the extent and location of areas dominated by noxious weed species. Note that noxious weed species differ from county to county.

      iv. Delineate the location of any threatened or endangered species observed.

      v. The map should show the outline of the permit boundary and the outline of all areas to be affected by the proposed operation.

      vi. Display the locations of all vegetation sample points.

      vii. Display the location and direction of all plant community photos.

      viii. If not otherwise provided in the application, include a summary of the total number of acres disturbed and a breakdown of the proposed disturbance by plant community.

      ix. All vegetation maps should include section lines, township-range information, North arrow, legend, map scale, and other important map related information. See_Attachment IV of Reference Document 1, General Information, of this guideline for map formatting and information that should be included.

   c. Threatened or Endangered Plant Species, Noxious Weeds

      A survey of the area to be affected (regardless of the size of disturbance) should be conducted to note the presence of any threatened or endangered plant species, and any noxious weeds. Photographs of T&E species should be submitted. The relative abundance of any of these species noted should be described and include an estimate of the extent of noxious weeds.

   d. Photographs

Original (or digital color copies of) photographs of the plant communities to be disturbed as well as a view of the Extended Reference Area (EXREFA) should be included in the application. If REFAs were used, then photos of each REFA (by plant community) should be included in the application.

2. General Format for Appendix D-8

   The following is a suggested outline for organization of Appendix D-8.

   a. Table of Contents
      A summary of the major entries, including lists of figures, tables, and maps.

   b. Introduction
      A description of the location and general features of the permit area and the personnel (or firm) conducting the baseline inventory.

   c. Methods
      A description of all procedures used in the baseline inventory, which includes:

      i. Delineation and mapping of plant communities, REFAs or EXREFAs and other land units.

      ii. Cover sampling of plant communities

         A. Specific calendar dates of all sampling

         B. Selection of sample points

         C. Transect procedures

         D. Sampling intensity and sample adequacy

      iii. Selection and Sampling REFAs and/or EXREFAs

      iv. Species List

      v. Data for Cropland or Hayland

3. Threatened and Endangered Species

4. Results and Discussion
   A presentation and interpretation of the vegetation data, to include:

   a. A description of plant communities or other land units.

   b. A description of each REFA or EXREFA and discussion of its representative nature.

   c. A tabular summary of the total acreage of each plant community and affected acreage of each plant community (see Table 1, Appendix V, Guideline 2).

d. A summarized cover sampling data for each plant community (see Table 2, Appendix V, Guideline 2).

e. A summarized cover sampling data for the REFAs (see Table 2, Appendix V, Guideline 2), if applicable.

f. A comparison of cover sampling data between each plant community and its representative REFA (see Table 3, Appendix V, Guideline 2), if applicable.

g. An evaluation of sample adequacy and confidence level achieved for each plant community and its representative REFA (see Table 4, Appendix V, Guideline 2).

h. A species list, selenium indicators, species of special concern and noxious (designated) or declared weeds (see Appendices I, III and IV, Guideline 2).

i. A species diversity table (see Table 4).

5. Literature Cited
6. Raw Data

I. Appendix D-9, Wildlife

1. As required in LQD NonCoal Rules and Regulations, Chapter 2, Section 1(f), the applicant shall consult with the Wyoming Game and Fish Department and the U.S. Fish and Wildlife Service prior to submission of a permit application to determine specific additional permitting requirements. Copies of all correspondence to and from the agencies should be included.
2. A species of particular importance is Sage Grouse. Information concerning this species must be addressed pursuant to the requirements of the Governor's Executive Order No. 2011-5.
3. The applicant should consult LQD Guideline No. 5, Wildlife.

J. Appendix D-10, Wetlands Habitat

1. Appendix D-10 must contain copies of the wetland delineation, descriptions of proposed disturbances, and mitigation information.
2. The U.S. Army Corps of Engineers (USACE) must be contacted for specific instructions on what the Corps requires for wetland delineation and mitigation for the mining project.
3. While USACE acceptance/approval is not required before LQD permit approval, USACE will not allow disturbance to begin until they have done so. All documentation of USACE approval or mitigation requirements must be submitted

to LQD for inclusion into the permit and determination if a permit revision is required. Generally, LQD will place a condition on the permit for the operator to supply this information.

K. Appendix D-11, Background Radiological Surveys

1. This appendix must include a description of the natural gamma of all lands within the impacted area as required by W.S. § 35-11-428(a)(i).
2. For uranium or thorium recovery facilities any information required in NUREG 1569 Section 2.9.1 Background Radiological Characteristics, Areas of Review that is not stated above shall be included in the application.

L. Appendix D-12, Draft Statement of Basis

The Statement of Basis is a synopsis of the reclassification/exemption request, and will be derived from information submitted as part of the application. See Reference Document 7, Attachment 1 for an example.

M. Appendix D-13, Population Distribution and Food Sources

For uranium or thorium recovery facilities any information required in NUREG 1569 Section 2.3.1 Population Distribution, Areas of Review shall be included in the application.

V. Part III, Aquifer Reclassification/Exemption

A. Describe the aquifers to be classified or exempted. Information from other sections of the application may be referenced and only summarized in this section. However, an attachment to the permit must contain all the required information to justify a reclassification and aquifer exemption. The attachment will be provided to the WQD and US EPA for their review and action. See Reference Document 7, Aquifer Reclassification Exemption, for additional detail.

VI. Part IV, Mine (Operations) Plan

A. Introduction

1. W.S. § 35-11-429 lists specific content requirements of every in situ permit. This includes the following:

   "Prohibit any significant change in mining technique, method of operation, recovery fluid used, mining and reclamation plans or other activities that would

jeopardize reclamation or protection of any waters of the state unless a permit revision has been approved by the director."

This statement is required in the discussion of mining methods.

2. It is recognized that in situ operations, especially for uranium, require an extensive drilling program to accurately delineate the ore zone, gather specific wellfield hydrology, and determine the placement of wells. Except for perhaps the first wellfield, this data is collected as the operation advances and is submitted to the LQD after the permit is approved. This information is called a "Wellfield Package." Information for the first wellfield may be submitted as part of the initial permit application. Subsequent or new wellfields cannot be operated until the associated Wellfield Package is approved. The requirements of the Wellfield Package are given in Section VI and Reference Document 9, Wellfield Package, of this guideline. Each permit application must include a list of the items that will be submitted in a Wellfield Package. The review process for a wellfield package not contained in the permit is found in Attachment II of Reference Document 1, General Information.

B. Site Description and Facilities Layout and Maps

1. Description of Facilities

   Provide a contour (topographic) map(s) locating the proposed facilities within the permit area, including plant buildings, satellite buildings, header houses, impoundments, roads and public highways, utilities and easements, temporary and permanent drainage diversions, stockpiles for topsoil, product and waste, chemical storage areas, pipelines related to the mining operations, disposal wells, and wellfields. Attachment IV of Reference Document 1, General Information contains information concerning map requirements.

   a. Central Processing and Satellite Plants

   b. Other buildings; information regarding buildings should include a general description of the type and size of buildings to be constructed

   c. Fencing and access control

   d. Chemical Storage Facilities

      Provide a discussion of the chemicals to be located or stored on site. Include both those used for the mining process and the nonprocess-related chemicals. Include a description of the safety precautions to prevent the chemicals from entering the environment.

2. Roads

   Provide a discussion and description of all access roads leading to the proposed permit area and roads providing access within the permit area to plants, wellfield

buildings, miscellaneous facilities and monitor wells. Include all roads listed in LQD Rules & Regulations Chapter 1, Section (ax). Specify the preexisting roads that require no upgrading, the preexisting roads that will be upgraded, and the roads that will be constructed.

a. The location and classification of all roads must be provided on a map.

b. The location and size of all culverts should be shown on a map.

c. The design and construction of any stream crossings should be discussed in this section. Basic hydrologic information demonstrating that crossing designs and culvert sizing are appropriate may be required, but the minimum size is 18 inches.

3. Proposed Wellfields

Discuss and show on a map the proposed wellfields for the permit area. This should include the projected monitor well ring as required by Chapter 11.

4. Utility Corridors

a. Discuss and show on a map the location of all existing utility corridors. Also show all proposed utility corridors serving the facilities area and the mine wellfields.

b. All new power lines built within the permit area owned by the applicant must be constructed to protect and deter raptor perching. Power lines should be built, at a minimum, to standards identified in the *Suggested Practices for Raptor Protection on Power Lines—The State of the Art in 2006* (Avian Power Line Interaction Committee 2006) to minimize electrocution potential.

5. Proposed Pipeline Locations

Discuss and show on a map the location of all proposed pipelines that will serve the facilities area and the mine wellfields. The applicant should minimize the footprint of pipelines and locate them such that disturbed areas are consolidated. However, it is not recommended that high pressure pipelines such as those serving deep disposal wells be co-located with wellfield pipelines.

6. Deep Disposal Wells

The number and location of deep disposal wells must be discussed and shown on a map. This discussion includes the following:

a. Proposed Deep disposal well construction details, including:

i. Compliance with Wyoming Department of Environmental Quality/Water Quality Division (WDEQ/WQD) Class I disposal well standards;

ii. General discussion of depth

iii. All surface related disturbances including the location of all pipelines servicing the well;

7. Drainage Plan

   Show on a map(s) the drainage of the site and describe what steps will be taken to prevent erosion of disturbed areas.

C. Topsoil and Subsoil Salvage and Protection

1. Soil

   a. Topsoil - means the A and E Horizons or any combination thereof (Non Coal Rules and Regulations (R&R), Chapter 1, Section. 2(bm)).

   b. Subsoil - means the B and C Horizons excluding consolidated bedrock material (R&R, Chapter 1, Section 2(bi)).

   c. Suitable Topsoil and Subsoil - means topsoil and subsoil that meets or exceeds the criteria established in the WDEQ/LQD Guideline No. 1A and Guidleline No. 1, "Topsoil and Subsoil", or those criteria otherwise authorized by the LQD Administrator.

   d. Long-Term Topsoil/Subsoil Stockpile - means a stockpile that exists for a period greater than six months. These stockpiles are associated with more extensive and permanent facilities, such as plant areas, satellite facilities, office areas and primary access roads. These stockpiles might not be used for reclamation of these areas for 10 years or more after stockpile construction. Long-term stockpiles require a topsoil sign with letters at least 6 inches high placed either on the pile or in close proximity of its base. The stockpile must be seeded with a temporary seed mix as soon as the pile is completed or when topsoil salvage operations are completed for the season.

   e. Short-Term Topsoil/Subsoil Stockpile - means a stockpile that exists for a period less than six months. These small stockpiles are associated with drilling mud pits, pipeline or utility line construction, and similar activities where topsoil/subsoil will be quickly reapplied. Short-term stockpiles do not require temporary seeding/revegetation or topsoil signs but they should be flagged or have other temporary means of alerting equipment operators not to drive on or otherwise contaminate the piles.

2. The Administrator may authorize topsoil to remain on areas where minor disturbance will occur associated with construction and installation activities including but not limited to light-use roads, signs, wellfields, utility lines, fences, monitoring stations, and drilling provided that the minor disturbance will not destroy the protective vegetative cover, increase erosion, nor adversely affect the soil resource. In situ mining operations have the potential to negatively impact the native vegetation and the topsoil resource.

3. In addition to the normal discussion regarding topsoil such as salvage depths and the volume to be salvaged and stockpiled, the applicant is requested to develop Best Management Practices for topsoil salvage and protection including the temporary seeding/stabilization of disturbed areas. Reference Document 6, Topsoil and Subsoil Management and the Associated Erosion Control, and Temporary Seeding/Stabilization of Disturbed Areas, has additional detail concerning topsoil protection.

4. The applicant must indicate on an appropriate mine operations map the areas which will have the topsoil and/or subsoil salvaged and placed in a long term topsoil stockpile and those areas where mine operations will take place but the topsoil will not be salvaged. This information for specific wellfields could be included in the wellfield package. (see 6 below)

5. The purpose of erosion/ control is to protect native vegetation and topsoil from contamination and prevent receiving waters from being impacted. The application should include a brief discussion of the sedimentation control measures and include a reference to the WQD Storm Water Permit. IAW WQD a copy of the plan will be maintained on site. (see Reference Document 6, Topsoil and Subsoil Management and the Associated Erosion Control, and Temporary Seeding/Stabilization of Disturbed Areas).

6. Describe the procedure(s) used to protect the topsoil and subsoil, as required in Chapter 3,Section 2(c)(i) through (iii), from excessive compaction, degradation, and wind and water erosion where stockpiling of topsoil and subsoil is necessary.

7. Include a map showing areas where topsoil and subsoil salvage will occur, including construction of wells and pipelines, (salvage information for individual wellfields may be submitted with the respective wellfield package) and include a discussion of the:

    a. estimated topsoil and subsoil salvage depth for each area;

    b. estimated volume to be salvaged from each area;

    c. estimated amount to be placed in each stockpile; and

    d. identify the stockpile location(s).

8. Describe the methods used to stabilize disturbed areas that will not be immediately reclaimed. LQD strongly recommends seeding these areas during the next possible seeding window. Include the following:

    a. A description of the areas

    b. A temporary seed mix

        i. Species to be planted

        ii. Pounds of pure live seed for each species and total for the mix

c. Seed bed preparation

d. Planting methods and equipment to be used.

e. Whether mulch will be used

D. Description of Mining

1. Description of Production Zone(s)

   Provide a description of the location within the permit area and show on a map where underground injection is to be authorized.

2. Recovery fluid(s) or lixiviant

   Describe the lixiviant proposed to be used including its chemical makeup and concentration.

3. Description of mining processes.

   a. Provide a description of chemical reactions that may occur during mining as a result of recovery fluid injection. If the process is to be held confidential as a trade secret, provide a statement to that effect in accordance with W.S. § 35-11-1101(a) and request that these pages be removed from the permit and be retained in the confidential files.

   b. Major chemical reactions or physical processes anticipated at each step in the process should be described. This section should identify the composition and average and maximum volume of fluid to be injected during operation. Special processes and reactions, such as those involved in ion exchange, reverse osmosis, or high pressure water injection should also be identified in this section. The anticipated volume and composition of waste waters or materials generated by the mining operation should be described.

4. Assessment of Impacts to Water Resources on Adjacent Lands and Potential Mitigation

   W.S. § 35-11-428(iii)(E) requires an assessment of impacts to water resources on adjacent lands and the steps that will be taken to mitigate the impacts.

   a. For the groundwater assessment, the operator should provide a 5-foot drawdown map for each potentially affected aquifer and consider and discuss potential impacts to wells within the 5-foot drawdown contour.

   b. For the surface water assessment, the operator should include potential impacts to specific resources such as ponds, wetlands, etc.

   c. Include consumptive use amounts

   d. Potential impacts to offsite groundwater

e. Steps to mitigate potential impacts

5. Development and Delineation Drilling

Describe the ongoing developmental and delineation drilling within the permit boundary.

a. Include general discussion of all drill holes within the permit area, including geotech holes and developmental drilling holes.

b. Discuss the Practices, procedures and techniques to abandon holes, see LQD Non-Coal Chapter 8.

c. Reporting commitments

E. Include discussion of Wellfield Design and Construction

1. Wellfield Design

a. Typical patterns(s) layout and dimensions. The classic in situ pattern is the five spot with a production well surrounded by four injection wells. While the pattern dimensions vary, the application should indicate the range of distances between the injection wells. Other patterns are also used based on the variability in the physical dimensions of the ore body. These include a line or staggered pattern. The application should describe these and give a typical distance between wells.

b. The monitoring well network used for excursion detection should be explained and shown on a map. Wells should be installed in aquifers which show the potential for being affected above, within, and below the production zone, and should be used for identifying excursions from the production zone. Monitor well spacings should reflect directional transmissivity and other conditions identified through on-site pump tests. The width of the area between the production field and the monitor wells should be such that the monitor wells are within the zone of control of pumping wells which would be used to control excursions. (See Reference Document 9, Wellfield Package).

c. The operator is responsible for restoring all groundwater affected by the mining process, including the area between the production field and the monitor wells, if it has been affected. It is therefore in the operator's best interest to establish as small a buffer zone as is operationally feasible. Monitor wells typically should be completed in the lower portion of the first aquifer/sand above the ore and in the upper portion of the first aquifer below the ore. Placement of these wells should be based upon knowledge of the nature and extent of the confining layer and the presence of drill holes, hydraulic gradient, and historic abandonment procedures.

d. A site specific, technically sound method for locating monitor wells, including but not limited to:

   i. Gradient consideration,

   ii. Dispersivity of recovery fluids,

   iii. The initial excursion recovery measures employed by the operator,

   iv. The normal mining operational flare (the lateral and vertical extent of affected area under normal operating conditions),

   v. Model the distance an excursion is likely to travel down gradient in 60 days based on injections continuing for 2 weeks and the production well is turned off, and

   vi. The recoverability within the allowable regulatory time frame, as specified in Chapter 11 of the Land Quality NonCoal Rules and Regulations, should be employed,

   vii. Monitor well locations and the possible lateral extent of an excursion are to be located using the groundwater flow model MODFLOW, or other technically justified method with prior approval of LQD.

e. Monitor well spacing may be increased if trend wells are used. (See Reference Document 9, Wellfield Package).

f. All perimeter monitor wells completed in the production zone must be in hydraulic communication with the production zone. Additional wells with lesser spacing may be necessary in preferred flow path zones. It is recommended that trend wells be monitored and the data maintained on site for inspection. For trend wells, unless an excursion occurs at the monitor well ring, remedial action is not required.

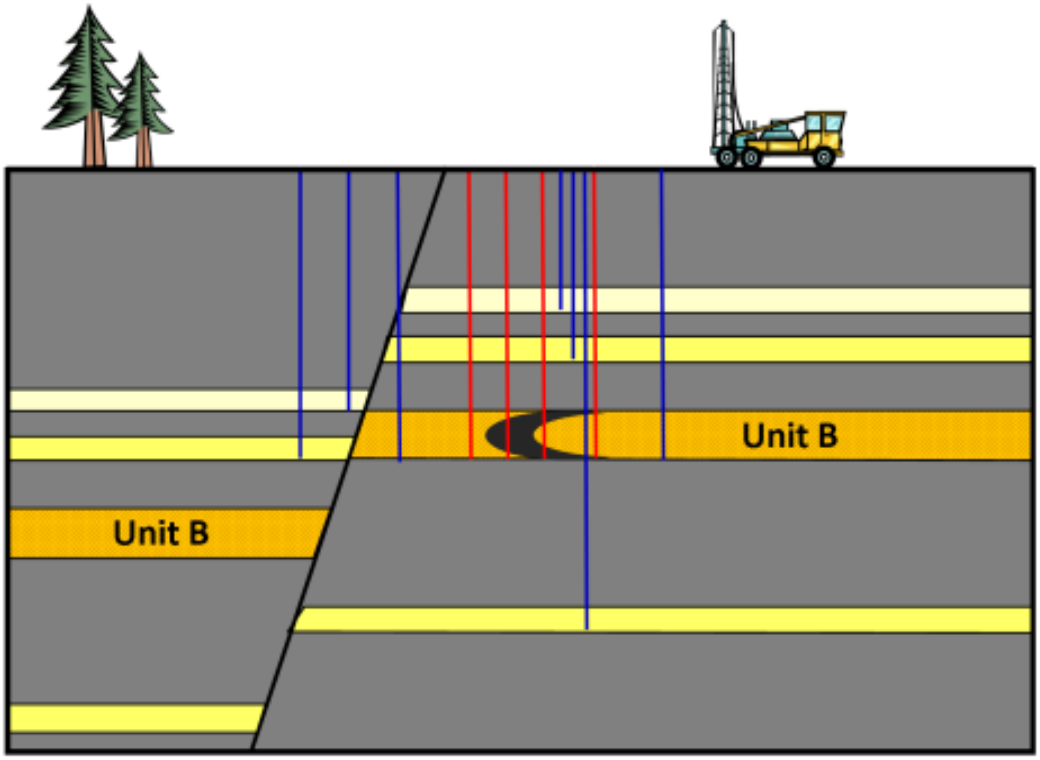
g. Operational or monitoring wells in proximity to hydrogeologic features, including faults, need to take into consideration the hydraulic effects of such features and appropriately place monitor wells. For example, if a wellfield is producing from "Unit B" on one side of a fault, monitoring wells on the opposite side of the fault should be placed in the unit that is structurally adjacent to the offset "Unit B". There may be a need to place monitoring wells in multiple aquifers (above, below, and in the production unit) across fault zones depending upon the geology, confinement or interconnection resulting from the faulting, and vertical hydraulic gradients.

h. The monitoring network must be superimposed on a topographic map identifying the wellfield area. The extent of the ore zone, faults and other hydrogeologic boundaries should be identified on the map.

i. Headerhouse Design

Include a description, discussion, and typical plan details of the headerhouses, manifolds, trunklines, and other pipelines associated with the wellfield. Include the size and burial depth of the different pipelines and any testing of these facilities to ensure they are ready for operations. Include any fluid control methods, spill detection, alarm systems, and containment features within the headerhouses.

Hypothetical Cross-Fault Monitoring



injection/production wells = red
monitoring wells = blue

2. Well Installation and Completion

a. Typical completion details for all monitor wells.

The operator must include typical details for monitor well construction in the permit. Reference Document 8, Well Installation Completion, of this guideline provides additional guidance on monitor well construction. Wellfield packages must contain construction details for all monitor wells. Attachment V of Reference Document 1, General Information, of this guideline lists the

well construction information that should be provided in an electronic format. Attachment V of Reference Document 1, General Information, also provides a link to LQD's website for the required spreadsheet.

b. Typical completion details for injection and production wells.

A detailed description of the typical proposed well completion procedures for injection and recovery wells, as required by Section 6 of LQD NonCoal Rules and Regulations, Chapter 11. At a minimum, the casing size and type, wellbore diameter, centralizers, screens, gravel pack, annular sealant properties, displacement technique, sealant setting time and under reaming must be described.

c. Well Development.

Describe the procedures used to develop the wells such as air lifting, swabbing, pumping, or accepted development stimulation techniques. Also describe the type of monitoring (i.e., pH and conductivity) performed to ensure the development activities have been effective.

d. Mechanical Integrity Testing (MIT) details (see also Reference Document 8, Well Installation Completion.

i. Provide a schedule for and description of the procedures to demonstrate and maintain mechanical integrity of all Class III injection wells as required of Chapter 11.

ii. The mechanical integrity testing plan must include a commitment to quarterly reporting of mechanical integrity test results to the LQD.

3. Well Corrective Action Plan

Include a plan for wells that fail MIT or are improperly sealed, completed, or abandoned. The plan shall include a time schedule and steps or modifications that are necessary to prevent movement of fluid into unauthorized zones.

4. Notice of Completion of Construction

LQD R&R Chapter 11 requires an operator to submit a notice of completion of construction in the quarterly monitoring reports. Reference Document 8, Well Installation Completion, provides additional detail concerning the reporting procedures.

a. Provide a discussion and list the information that will be provided to the administrator.

b. The notice shall be signed by a company representative and include the MIT results.

5. For uranium or thorium recovery facilities, any additional information requested in NUREG 1569 Section 3.1.1 and 3.2.1 shall be included.

F. Wellfield Package Information

1. Conceptual Wellfield Package.

   The applicant should describe the type of information that will be submitted for future wellfields. See Section VI and Reference Document 9, Wellfield Package, of this guideline for additional information.

2. The applicant should acknowledge if the testing plan to obtain the necessary hydrological information changes from the procedures previously approved by LQD, the new plan will be required to be submitted to LQD for approval.

3. If the wellfield package is for a wellfield that was not previously identified in the permit, a revision to the permit with public notice will be required. A previously unidentified wellfield will also most likely result a change in the aquifer reclassification and aquifer exemption.

G. Wellfield Operational Control and Monitoring of Wellfields

Provide a description of the proposed methods of operation, including:

1. Injection Rate and Pressure

   a. Include the fracture and fluid pressure of each production zone

   b. Injection rate, with the average and maximum daily rates and the volume of fluid to be injected;

   c. Typical discussion of injection pressures, with average and maximum injection pressures, as required by LQD Chapter 11. Include a discussion or comparison to the formation pressure and steps to be taken to prevent fractures in the confining zone;

2. Operational Control of Injection Fluids

   a. Describe the procedure(s) to assure that the installation of recovery, injection, and monitor wells will not result in hydraulic communication between the production zone and overlying or underlying stratigraphic horizons.

   b. Proposed injection procedure.

   c. The applicant needs to describe how the pressures and flow rates will be monitored. Electronic monitoring of pressures and flow rates at both the headerhouse and at the well head are suggested. The monitoring devices should be connected to the central control facility with alarms to alert operators of problems and allow automatic or quick response by wellfield operators.

d. Describe the procedures utilized to verify that the injection and recovery wells are in communication with monitor wells completed in the production zone and employed for the purposes of detecting excursions.

3. Wellfield Monitoring

a. Include the proposed method for calculating the Upper Control Limits (UCLs). See Reference Document 4, Upper Control Limit Calculation, for additional detail.

b. The frequency of monitoring UCLs during mining is somewhat dependent on hydraulic conductivity. Sampling and analysis for UCLs should be done twice monthly and at least 10 days apart.

c. Parameters

i. A parameter set should be developed for the detection of excursions. Excursion parameters are process specific. Factors that should be considered in the selection of excursion parameters include the potential of constituents to participate in reactions such as sorption, oxidation/reduction, and precipitation. Possible excursion parameters may include the following:

(A) For Uranium:

TDS or conductivity

Chloride

Sulfate

Bicarbonate or Total Alkalinity

Sodium

(B) For other minerals, please contact the LQD

ii. Water level measurements should be part of any excursion monitoring program.

4. Water Balance

Include water balance calculations that demonstrate that the liquid waste disposal facilities (surface impoundments, land application, deep well injection) are adequate to process the proposed production and restoration efforts at any time. This will include:

a. Production only

b. Concurrent production and restoration – this may be separated into different phases of restoration such as production and groundwater sweep, production and Reverse Osmosis, etc.

c. Restoration only

d. Plant water

e. Water from pump tests, see discussion in Section M, page 25.

f. Design Throughput and Production

Provide a description of the design capacity of the plant facilities, including the process stream, waste stream, any makeup water, and the source of the water.

5. Definition of Completion of Mining

With in situ mining operations, it is difficult to determine when mining is complete and restoration activities should start. Include a discussion of the criteria that will be used for determining when mining is completed.

H. Excursion Response and Additional Monitoring

1. Introduction

Excursion detection, control, and cleanup procedures should be identified in this section, considering both horizontal and vertical excursions. The monitoring network described in the wellfield design section should be referenced and parameters used to detect and confirm excursions should be identified. An excursion measured at a monitor well does not automatically mean the operator has violated their Underground Injection Control (UIC) permit.

2. Monitoring During Excursions

a. If UCLs are exceeded (e.g. 2 or more), then the sampling and analysis should be repeated within 24 hours of receipt of analytical data. If results of both the first and second sampling events indicate if two or more UCLs are exceeded, then the excursion will be considered confirmed.

b. If the second sample does not indicate the UCLs have been exceeded, a third sample shall be collected within 24 hours of receipt of the second sampling data. If neither the second nor the third samples indicate the UCLs were exceeded, the first sample shall be considered in error. If confirmed by either the second or third sample, the well will be considered to be on excursion status and should be reported verbally to the agency within 24 hours.

c. If the results of the confirmatory sampling event are not received within 30 days of the initial sampling event, then the excursion is considered to be confirmed.

3. Corrective action plan

   The operator should include a discussion in the application that describes the steps to be taken and addresses the possible scenarios discussed in this section:

   a. The applicant must describe the actions to be implemented to correct and control an excursion event. The actions must be identified for both horizontal and vertical excursions.

   b. Samples are required to be collected and analyzed on a weekly basis until the excursion is controlled.

4. Reporting procedures

   In the event of an excursion, the Land Quality Division must be verbally (by phone or email-read receipt) notified within 24 hours. Written notification describing implementation of the approved plan is required within 5 days. (See Chapter 11) of the Land Quality NonCoal Rules and Regulations.)

5. Excursion Control Actions

   a. The operator should implement the recovery plan and continue monitoring. Samples will be collected and analyzed on a weekly basis until the excursion is controlled. The excursion is considered controlled when it can be demonstrated through water quality and groundwater gradient or, if applicable, pressure measurements, that recovery fluid in unauthorized areas is declining. It is important to realize there is a difference between "controlling" an excursion and "recovery" of excursion fluid.

   b. If the excursion is not controlled within 30 days after confirmation of the excursion, a suite of samples should be analyzed for the parameters listed in LQD R&R Chapter 11. At the time UCLs are no longer exceeded, a suite of samples should again be analyzed for those parameters.

   c. In this section, the operator should include a statement recognizing that if an excursion is not controlled within 60 days after confirmation of the excursion, the administrator (after consultation with the director), may terminate, revoke, or modify the mining operation (see W.S. § 35-11-429).

   d. If the excursion is controlled but the fluid is not recovered within 60 days after confirmation of the excursion, the operator will submit a plan and compliance schedule to WDEQ within 90 days after confirmation of the excursion. The plan and schedule must meet the requirements of LQD R&R Chapter 11. Slow recovery of excursion fluid may result in an increase in the reclamation bond.

6. For uranium or thorium recovery facilities, any information required in NUREG 1569 Section 3.3.1 not already covered above, shall be included in the application.

I. Well Maintenance, Repair and Abandonment

1. Provide a maintenance plan to ensure:
   a. A commitment to protect all monitoring wells to the extent possible until their removal and reclamation (see also Reference Document 9, Wellfield Package).
   b. Wells are sufficiently covered to protect against entrance of undesirable material into the well;
   c. The wells are marked and can be clearly seen; and
   d. The area surrounding each well is kept clear of brush or debris; and
   e. Monitoring equipment is appropriately serviced and maintained so the monitoring requirements of Chapter 11 can be met.
   f. MIT methods and schedule
   g. Provide corrective action plan for MIT failure, and improperly sealed, completed and abandoned wells
2. Well Plugging and Abandonment
   a. All In-Situ mine permits are required to include plans for well repair, plugging and conversion. All wells must be properly abandoned in accordance with the approved plans to prevent adverse changes in water quality or quantity and to prevent a hazard to people, livestock, wildlife and machinery. A well is considered "abandoned" when it has not been used for a period of 2 year, unless the owner demonstrates his intention to use the well again by properly maintaining the well. Chapter 11 requires repair or plugging and abandonment within 120 days of wells which have failed a Mechanical Integrity Test (MIT).
   b. Prior to abandonment, all pumps, pipes, wiring and any obstruction or debris that may interfere with the adequate plugging operations shall be removed from the well.
   c. Chapter 11, Section 70 of the Water Quality Division (WQD) Rules and Regulations describes acceptable well abandonment procedures. In general WQD requirements consist of placement of impermeable material (material with a permeability of 10-7 cm/sec or less), such as neat cement, sand-cement grout, concrete, or bentonite clay, (use of drilling muds is not acceptable) in the same interval as confining units and extending 50 feet above and below screened or perforated zones. Fill material may be placed opposite permeable water bearing units. Fill material consists of clay, silt sand, gravel, crushed

stone, native soil, and mixtures of these materials. Materials containing drilling muds or organic matter are not acceptable. In most instances it is preferable to fill the entire hole from bottom to top with impermeable material.

d. The SEO promulgated their Part III, Water Well Minimum Construction Standards in June, 2011. Those rules require that any well which is abandoned or permanently removed from service be entirely plugged from bottom to top with specified approved grout materials.

e. Typically the casing is cut off approximately 2 feet below ground surface and the upper 2 feet is filled to the surface with suitable material. A steel plate or equivalent permanent tag showing the permit number, well number and date of plugging must be affixed to the top of the plug.

f. Within 15 days after a well has been plugged and abandoned, the owner shall file a plugging record with the WQD and retain a copy on site until termination of the permit. Chapter 11 of LQD Rules requires that plugging and abandonment reports be filed with LQD and SEO no later than 12 months after well abandonment.

J. Wastewater Production and Disposal Capacity

1. Type, (i.e., plant waste streams - where produced, and quantity)
2. Disposal locations and capacity and any treatment technology
   a. Deep disposal wells
   b. Evaporation ponds
   c. Land application of wastewater
   d. Surface Discharge
   e. Other Methods approved by the Administrator

K. Lined Pond Inspections, Monitoring, Leak Detection, and Control

Describe the procedures and schedule for inspection and monitoring of lined ponds and their leak detection systems. Describe the procedures and schedule for inspection and monitoring of Wellfield and Plant Releases – Potential and Proposed Actions and their leak detection systems.

L. Wellfield and Plant Releases

1. The potential for wellfield and plant releases should be discussed along with an indication of likely contaminants involved. Spill control and cleanup procedures

should be outlined. Wellfield and Plant Release Potential – At a minimum, address the potential at the following areas:

a. wellfields

b. pipelines

c. lined ponds

d. deep disposal wells

2. Wellfield and Plant Release Prevention Plan

3. Proposed Wellfield and Plant Release Response

4. Reference Clean Up Standards – such as DEQ VRP, NRC and EPA.

5. Wellfield and Plant Release Reporting

M. Other Wastes and Disposal

1. Water from pump tests.

   a. If an operator plans to discharge pump test water to a surface drainage, the operator will apply for a WYPDES permit using the procedures and mechanisms already in place;

   b. If an operator plans to inject pump test water to the subsurface, the operator will apply for a separate WQD UIC permit using the procedures and mechanisms already in place;

   c. If the operator plans to apply the water to the land surface and takes the position that the water will not enter or threaten to enter either surface or groundwater, the operator shall submit documentation to the WQD administrator which provides justification for that position. If the administrator concurs with the operator, the administrator will send a letter of concurrence to the operator with a copy to the LQD. That letter will state that it is conclusion of the WQD administrator that the WQD lacks jurisdiction provided the pump test water is applied as described by the operator. If the WQD administrator does not concur with the operator's position that there will be no discharge or threat to discharge to waters of the state, the administrator will send a letter to the operator, with a copy to LQD, giving the basis for that decision.

      WQD will clearly state in its letter of concurrence it is making a decision only on WQD's authority to require a permit. WQD will not be passing judgment on any other aspect of the disposal including authorizations or approvals that may be needed from the land owner or any other governmental agency. Also,

be aware that WQD will retain its authority to inspect the operation to insure that it is being done as described.
An operator who chooses to take the land application approach and wishes to get a letter of concurrence from WQD, should contact the WQD Administrator early in the process so there can be a discussion on exactly what information WQD will require.

2. Other liquid wastes

   a. Hazardous wastes

   b. Domestic liquid wastes

3. Solid wastes

   a. Describe the various types of solid wastes to be generated,

   b. The amount of each type.

   c. Disposal method

4. Effluent Control Systems

   a. For uranium or thorium recovery facilities, any information required in NUREG 1569 Section 4.1.1 Gaseous and Airborne Particulates shall be included in the application.

   b. For uranium or thorium recovery facilities, any information required in NUREG 1569 Section 4.2.1 Liquids and Solids, not already required above, shall be included in the application.

N. Subsidence

An estimate of the amount of subsidence and a monitoring plan should be outlined in the application. Costs associated from backfilling subsidence areas should be included in the bond estimation. If subsidence is not a problem for the type of mining, indicate so in the application.

O. Wildlife Monitoring and Mitigation Plan

Once potential impacts have been identified by the company, methods to minimize impacts to wildlife during and after mining should be developed and described in the mine operations plan. Impact abatement procedures will often be tailored to fit individual sites. Possible mitigation includes proper fencing, obtaining or providing recreational access, controlled speed limits, programs to educate employees about game laws and sensitive wildlife species, replacement of dead snags, creation or development of water sources, protection of riparian areas from grazing, reestablishment of raptor nesting sites, wildlife-oriented reclamation, problem solving research, and habitat improvement projects. Mine personnel are encouraged to

develop new and innovative techniques (within legal constraints) to help offset mine impacts. All fence designs should be provided, referencing specific types described in Guideline 10. The U.S. Fish and Wildlife Service (USFWS), Office of Ecological Services, should be contacted early regarding raptor nest conflicts and the possible presence of threatened or endangered species. The outcome of this consultation should be discussed in the mine operations plan. Mitigation procedures should be described and supported by a letter of concurrence from the USFWS. The mitigation plan should include the following items:

4. Big game
5. Sage grouse
6. Raptors
7. Migratory birds
8. Threatened and endangered species

P. Mining Schedule

Provide a discussion and illustration that shows anticipated start and end dates for major activities including facilities construction, and for each satellite plant and each wellfield construction and operation. At a minimum, this will include

a. A list of the proposed wellfields;

b. A map(s) which shows the proposed sequence for mining of the wellfields;

c. A proposed time schedule for construction, mining, and restoration each wellfield; and

d. The capacity of the water/waste water treatment systems and correlation of the capacity with the mining and restoration schedules.

Q. Summary and Table of Required Monitoring and Reporting

a. Include a section that summarizes all reporting requirements and include a table that lists all items that are to be reported to LQD. The table should include type of report, content summary, frequency of report, etc.

R. Operations

1. For uranium or thorium recovery facilities, any information required in NUREG 1569 Sections 5.1.1, 5.2.1, 5.3.1, 5.4.1, 5.5.1, 5.6.1, 5.7.1.1, 5.7.2.1, 5.7.3.1, 5.7.4.1, 5.7.5.1, 5.7.6.1, 5.7.7.1 and 5.7.9.1 shall be included in the application. This does not include NUREG 1569 Section 5.7.8.

S. Radiological Environmental Effects

1. For uranium or thorium recovery facilities, any information required in NUREG 1569 Sections 7.3.1.1.1, 7.3.1.2.1, 7.3.1.3.1, 7.3.1.4.1 and 7.3.1.5.1 shall be included in the application.

T. Effects of Accidents

1. For uranium or thorium recovery facilities, any information required in NUREG 1569 Section 7.5.1 shall be included in the application.

VII. Part IV, Reclamation/Restoration Plan

A. General Reclamation Schedules

The plan should include a schedule for reclamation broken down by different types of disturbance and different phases of reclamation work for each wellfield proposed in the application. The plan and schedule must consider instances where mining in a wellfield is completed but restoration cannot be initiated because ongoing mining activities in an adjacent wellfield. It must also consider where in the above example a restoration in a portion of a wellfield may be initiated. There may also be instances where mining in a portion of a large or long, linear wellfield may be completed and the rest of the wellfield is still in production but due the size or distance between the producing and non-producing portions of the wellfield restoration may begin. See also requirement in Section IV. J.5 of the mine operations plan to define when mining is completed in a wellfield or portion of a wellfield.

B. Groundwater Restoration

1. Introduction

   Aquifer restoration activities, including procedures, chemistry, facilities, equipment required and the expected final water quality should be briefly summarized. The timetables for restoration activities should be discussed.

2. Statement of Best Practicable Technology

   The application should clearly state what is considered Best Practicable Technology (BPT) for the permit at the time of approval. Changes in technology resulting in a new BPT may be added or required to be added to the permit as a revision. This discussion should include a reference to the following:

   a. Research and development activities conducted at the site and/or

   b. Comparison to other In Situ Leach (ISL) sites.

      The aquifer restoration methodologies described in item B.3 of this section should be compared to other ISL sites for which groundwater has been restored. The purpose of this comparison is to show that groundwater can be

restored and that the restoration methods constitute BPT. This comparison should include the following:

i. Geology

ii. Mineralogy

iii. Premining water quality

iv. Geochemistry (including major ions)

v. Lixiviant

vi. Anticipated postmine/prerestoration water quality

vii. Reductants used

viii. Restoration methods

ix. Pore volumes for each process

x. Length of time for wellfield restoration

xi. Restored groundwater quality

3. Target Restoration Values

   a. Include a discussion of the Target Restoration Values and how they are established.

   b. Each wellfield package should include the proposed Target Restoration Values for that wellfield.

4. Methodology/Process Description and Chemistry

Aquifer restoration procedures should be detailed in this section. Process description and chemistry should be specifically described. The anticipated volume, flow rates, and composition of water generated during restoration should be identified. Restoration water quality and water levels should be monitored and sampled at the very beginning and at the very end of restoration. Parameters to be analyzed should include the full suite as listed in Reference Document 10, Premining Water Quality and Quantity Sampling, of this guideline.

5. Monitor Network during Groundwater Restoration

A specific monitoring plan for both active and stability phases of restoration should be outlined. This may have to be modified depending on excursion events during mining. If there are changes to the approved restoration plan an updated plan should be submitted to Land Quality Division prior to beginning groundwater restoration.

6. Restoration Volumes and Flow Rates

   a. Pore Volume Displacement Estimate

b. Restoration Pore Volume Displacements

c. Restoration Flow Rates

d. Restoration Fluid Disposal

7. Stability Plan

a. Well Selection

Wells initially selected and listed in the reclamation plan will be used to determine restoration success. Both injection and production wells should be selected.

Based on the reclamation plan and the restoration success, the restoration sampling wells should be selected for monitoring during stability. (These wells should be identified in the reclamation plan to ensure appropriate baseline information is available, however, it is recognized that some wells may need to be changed or redesignated due to mining activities).

b. Stability Period

When the restoration goal is achieved, active restoration should be discontinued and a stability period of 12 months will begin. The end of the stability period is a decision making point for the DEQ, i.e., more restoration, longer stability period, or overall success. The restoration sampling wells should be monitored during the stability period generally - every two months or quarterly basis for a full suite of parameters in Reference Document 10, Premining Water Quality and Quantity Sampling, except those shown to be unaffected by mining and restoration processes.

c. Evaluation of Stability Data

i. The data should be analyzed on the basis of wellfield averages. In no case will wells of different baseline class be averaged together.

ii. The data should be examined on a parameter by parameter basis.

iii. The data should be examined over time (the twelve month period) to identify any trends - techniques such as scatter plots, trend, regression analysis and standard statistics should be used. A determination of aquifer stability should be made upon the "trends" in the data; i.e., an acceptably stable aquifer should not exhibit rapid upward or downward trends or be oscillating back and forth over a wide range of values beyond baseline variability.

iv. The data should be evaluated against baseline quality and variability to determine if the restoration goal is met - the primary restoration goal is always baseline. The secondary goal is to restore the water within class of use. The secondary goal of restoration within class of use is applicable for "problem" parameters if and only if BPT has been demonstrated.

Additionally for uranium or thorium recovery facilities groundwater must also meet criteria listed in 10 C.F.R 40 App A Criterion 5(b)5.

v. Statistical methods should be used to compare the restored aquifer data with the baseline, e.g. analysis of variance and t-test. It is important to address all of the assumptions inherent in the particular statistical method chosen. The restoration success will be evaluated on the basis of statistically equivalent populations between baseline and post-restoration data. Normally the same wells are used premining and post restoration.

vi. Potentiometric surface maps should be developed to reflect aquifer conditions at the end of the stability monitoring period. Following a decision that the aquifer geochemistry is relatively stable, data should be evaluated on a parameter by parameter basis to determine if:

- parameters have met baseline.
- parameters are above baseline but below class of use.
- parameters are above class of use.

8. Demonstration of Best Practicable Technology (BPT). The permit shall only contain a brief discussion of what will be submitted. The following shall be submitted as part of wellfield restoration package.

When submitting a wellfield restoration package to the division, the following items need to be discussed and documented. The permit should discuss how the operator plans to address and document these topics.

a. Type of Technology—The type of technology may be different for different circumstances.

b. Application of Technology - Has the technology been used correctly? As an example, reverse osmosis evaluation should include:

i. Number of gallons and/or pore volumes pumped

ii. Number of gallons reinjected

iii. Quality of water produced vs. reinjected

iv. Future Wastewater disposal capacity

v. Document that active restoration was discontinued at the appropriate time. LQD and the operator should agree when restoration should be discontinued.

vi. Proper maintenance and operation of equipment

c. Economics - Consider the amount it would cost to gain further reduction in parameters, (e.g., if it requires a very large expenditure for a relatively small gain

in water quality). Consideration of economics only applies if parameters fall within the class of use.

NOTE: If parameters are above class of use, then further restoration may be required.

9. Demonstration of groundwater restoration success. The permit shall contain only a brief description of how the operator will demonstrate restoration success. The operator must explain how they will demonstrate or evaluate groundwater restoration success. In general, the goal of groundwater restoration is to return the affected aquifers to a reduced environment. At the end of the stability period the LQD will evaluate groundwater restoration success based on the criteria presented below. When submitting a request for approval of aquifer restoration, the operator should provide documentation that addresses each criterion.

   (The following is adapted from *In Situ Wellfield Restoration Criteria* dated January 2005 by Richard Chancellor, LQD Administrator. It is assumed the restored aquifer has been demonstrated to be "stable").

a. Evaluation of BPT

   The first step in determining if groundwater has been restored is an evaluation of the use of BPT as required by the Environmental Quality Act (EQA). The permit will define BPT. While technology may change over the course of the life of the permit, the permit will still govern. However, the permit may be revised to include newer technology or to allow for testing of innovative technologies, particularly if those technologies would afford greater protection to adjacent aquifers.

b. Parameter by parameter water quality evaluation

   The second step is an evaluation if the restored groundwater on a parameter by parameter basis with the pre-mining condition of the groundwater as outlined in the Stipulated Agreement (*Kerr-McGee Nuclear Corporation v. Robert Sundin et al.).* Wellfield averages will be used to determine the condition of the premine groundwater. LQD may also consider the range of individual premine parameters in the event the postmine average is above the premine average.

   In the likely event that not all parameters have been returned to the premine average, the postmine groundwater will be compared to the premine class-of-use on a parameter-by-parameter basis. Each parameter will be reviewed to its premine class-of-use (see WQD Chapter 8 for class-of-use discussion). This evaluation will be used to determine if there are parameters that are of concern that may impact water. See Water Quality Rules & Regulations, Chapter 8, Section 5(a).

   In many cases, the premining groundwater will be Class IV(A). During mining, the well will have been reclassified by WQD to Class V. After mining the water must be returned to its Class of Use (commonly Class IV(A)).

Additionally for uranium and thorium operations the groundwater restoration must meet the criteria listed in 10 CFR 40 Appendix A Criterion 5 (b)5 including if baseline or MCL are not met meeting an approved alternate concentration limit.

c. Potential impact on adjacent groundwater

The last step in evaluating groundwater restoration is the potential impact on groundwater adjacent to, and outside of, the reclassification boundary. Groundwater in the production zone cannot impact the adjacent groundwater to the extent that the adjacent groundwater no longer meets its premine Class-of-Use. Additionally, adjacent groundwater must be protected such that concentrations of constituents for which Maximum Contaminant Levels (MCLs) have been established by the U.S. EPA (e.g., uranium and selenium) do not exceed those MCLs, or baseline, whichever is higher.

d. Modeling

If the groundwater in the production zone is restored to its premining condition on a parameter-by-parameter basis, no further evaluation is required. If there are parameters that exceed the premining conditions, the operator will be required to use appropriate modeling to demonstrate that those parameters above the premining conditions will not degrade the adjacent groundwater to the extent that the groundwater will no longer meet its previous class-of-use and that concentrations of constituents for which MCLs have been established by the U.S. EPA do not exceed those MCLs, or baseline, whichever is higher. If the adjacent groundwater class-of-use will be impacted, the operator will be required to conduct additional restoration. If the modeling indicates the adjacent class-of-use will not be impacted and that concentrations of constituents for which MCLS have been established by the U.S. EPA do not exceed those MCLs, or baseline, whichever is higher, a monitoring program sufficient to verify the model may be required.

C. Assessment of Impacts to Water Resources

The purpose of this section is to compare measured impacts to the impacts projected prior to mining. If the actual impact is greater than that projected the operator should discuss the differences and elaborate if additional mitigation is required. This assessment is due for each wellfield and at the end of the operation.

1. 5-foot drawdown maps for all affected aquifers compared to the premining projections. If the drawdown is greater than projected, specific private wells located within the 5-foot contour must be evaluated and determined if additional mitigation is warranted.

2. Assessment of impacts to specific resources such as ponds, wetlands, etc. and compared to the premining projections to determine if additional mitigation is warranted. Refer to the Surface Water reference document for additional guidance regarding surface water.

D. Decontamination and Decommissioning

1. Disposal of buildings and facilities. The plan should include procedures for disposing of buildings and other facilities.

2. Toxic materials - The procedures for permanently disposing of any toxic or acid forming materials should be provided.

3. Lined pond decommissioning.

4. Wellfield decommissioning.

5. Soil decontamination.

6. For uranium or thorium recovery facilities, any information required in NUREG 1569 Section 6.2.1 Reclaiming Disturbed Lands, not already required above, shall be included in the application.

7. For uranium or thorium recovery facilities, any information required in NUREG 1569 Section 6.3.1 Removal and Disposal of Structures, Waste Materials, & Equipment, not already required above, shall be included in the application.

8. For uranium or thorium recovery facilities, any information required in NUREG 1569 Section 6.4.1 Methodologies for Conducting Post-Reclamation and Decommissioning Radiological Surveys, not already required above, shall be included in the application.

E. Surface Reclamation

1. Post-mining land use. The proposed post-mining land use should be specified along with a discussion of the actions the operator will take to achieve that land use.

2. Process facilities and road reclamation. Describe the steps and how the facilities and roads will be prepared for reclamation.

3. Contouring and final topography including drainage restoration. The plan should demonstrate that surface affected lands will blend with adjacent topography and land uses and any drainages will be re-established.

4. Wildlife habitat. Where wildlife habitat will be part of the post-mine land use, LQD regulations require development of a plan to restore this use. All habitat reclamation procedures should be described in the reclamation plan of the permit application.

5. Surface preparation. The plan should indicate any surface preparation to be undertaken before topsoiling.

6. Topsoil application, estimated volumes and replacement depths

   Topsoil replacement methods and schedules should be included. Minimum depth of topsoil replacement should be specified. The addition of soil amendments that are planned should be indicated.

7. Revegetation practices. The plan for revegetation should include species to be seeded, rate of seeding, and method and time of seeding. If cover crops, mulch, fertilizer, or irrigation will be used, this should be discussed in detail including methods and timing, rates, locations, and water quality.

   a. Seed mixtures

      Include a table of the permanent seed mix listing the species by scientific and common name and the number of pounds of pure live seeds (PLS). LQD strongly recommends using native species. The seed mix will generally contain cool and warm season grasses and forbs. The total PLS for the seed mix should be no more than 12 to 14 pounds but the LQD district office should be consulted for composition and amount.

   b. Reseeding methods

   c. Include any special areas such as sage grouse habitat that require special measures or seed mixes.

   d. Protection of Newly Seeded Areas

      The plan should include measures and specifications to be used for protecting newly revegetated areas from grazing animals. A site maintenance plan which includes contingencies to correct weed establishment or erosional instability should be included.

8. Erosion control practices during and after reclamation

   Discuss and show the design and location of any erosion control practices.

9. Weed control

   The plan should include monitoring and when and what steps will be taken to control invasive weeds on the reclaimed areas. The applicant should be aware that each county has their own list of noxious weeds which may be different from the state requirements.

10. Evaluation of surface reclamation success

    Provide a discussion of the methods used to determine revegetation success. See Guideline 2 for further information.

11. Reclamation and postmining environmental monitoring

    Monitoring plans for reclamation and postmining environmental monitoring should be briefly outlined in the permit application. Detailed plans should be

developed in consultation with and submitted to the LQD before commencement of mining. See Guideline 2 for further information.

F. Restoration/Reclamation Cost Estimates

Restoration/Reclamation of in situ facilities has constraints not experienced by traditional surface mining operations. These constraints include capacity limitations on water treatment equipment, the need to maintain the proper water balance in the wellfields, pipeline and especially waste water disposal capacity. These constraints result in an extended time frame to complete groundwater restoration and mine closure. Other unique constraints include the disposal of radionuclide contaminated material and electrical power consumption and costs.

The plan should include an estimate of the reclamation costs broken down by different types of disturbance and different phases of reclamation work. Costs should be based on reclaiming the entire affected area after the first year as if the mine were to shut down at that time and be completely reclaimed including the removal of all facilities. Cost estimates should include restoration of the anticipated affected groundwater as well as surface reclamation. Information regarding buildings must include the following detail in part to enable accurate reclamation bond review:

- Size – width, length, and height
- Material
- Concrete thickness – floor and footers
- Sump detail

1. Most operators use a similar version of a spreadsheet that allows for efficient calculation of the bond estimate. It is recommended that the operator contact the LQD for sample formats successfully used by other operators to promote equality and consistency across the industry.
2. The bond estimate must be accompanied by a projected time schedule (Gantt chart) showing the completion schedule for each major reclamation operation/task.
3. The bond estimate must include an itemized accounting of all labor costs, including number and categories of personnel, salaries, and total hours required for the completion of the various reclamation tasks. A Gantt chart is suggested to display this information.
4. All assumptions and backup calculations must be included to support the bond estimate.

VIII. Cost Benefit Analysis

For uranium and thorium recovery facilities, at the discretion of the applicant, information required in NUREG 1569 Section 9.1, may be included in the application.

IX. Mine Wellfield Package

A. LQD Consultation

As discussed in IV above, wellfield packages are used to provide the detailed information for new wellfields. Before conducting any sampling or testing for a wellfield package, the operator should consult with LQD to clarify the content, testing, and methods required to satisfy the statutory and DEQ regulatory requirements. Reference Document 9, Wellfield Package, provides discussion and requirements necessary for a wellfield package.

B. Approval Process

Wellfield packages will not require from WQD a new aquifer reclassification or from EPA a new aquifer exemption as long as the package will not change the aquifer reclassification or exemption boundary approved by WQD or EPA, respectively, with the initial permitting action. Packages for wellfields that were not in the original permit as well as wellfields that were identified but whose size or shape changes which results in a change to the exemption boundary will require both a WQD aquifer reclassification and EPA aquifer exemption. Public notice will also be required. See Reference Document 1, General Information, Attachment II for a flowchart of the wellfield package process.

X. Research and Development License

A. Introduction

1. This portion of the guideline gives information specific to R&D Licenses. It only provides information requirements that are different from, or in addition to, the requirement for a permit. Unless specifically stated, the information below is in addition to the requirements for a permit. If a topic is not discussed, then the information requirements are the same as an in situ mining permit.

2. The research and development license is available to allow testing of new technology or proven technology in a new geologic setting. Therefore, operations under the license should identify procedures to be tested and evaluated.

3. The purpose of this section is to identify the research aspects of the research and development license. This section is meant to justify the areas in the license where exact mining and reclamation procedures, timetables, methods or results can only be generally described.

B. Adjudication

Instead of a Form 1-UIC, a Research and Development License application submits a Form 5 R&D License, In-Situ.

C. Appendix D-8 Vegetation

1. The area to be permitted for the R&D license should be mapped according to plant communities. The area to be affected should be delineated on this map. If the area to be affected (surface affected acreage is that which requires seeding for reclamation purposes and includes disturbances associated with roads) is less than 10 acres in size, a qualitative description of the vegetation communities is adequate. However, if the R&D will disturb more than 10 acres, quantitative sampling of the affected lands will be necessary. Parameters to be measured include % cover for each species (or life form categories), total cover and a species list. Measurements should be conducted in accordance with the current LQD Guideline No. 2.

D. Identification and Description of Research Methods

A description of each research area proposed in the mine and reclamation plan should be written. The description should define the anticipated techniques to be tested, the expected manner of implementation of the techniques, and the expected results.

E. Records and Reporting

A plan should outline the records that will be kept by the operator to identify the procedures actually used in the research areas and to identify the dates those procedures were implemented. For example, record keeping of the chemical composition of fluids, the volumetric water balance, injection pressures and volumes, burn intervals, and other standard operating procedures should be described in an efficient technical manner. The daily logs describing normal operational procedures may be reviewed by Division personnel on site visits.

F. Disposal of Product

A plan should be outlined for disposal of any product produced by the research project.

G. Reporting Procedures

A plan for submitting technical summaries of research results and the present status of the operation should be submitted as described in the license application. At the cessation of operations, operator should submit a final technical report of all research results, logs, procedures, conclusions, etc., to the LQD.

H. Confidential Material

Materials or record requests for confidential status will be reviewed pursuant to W.S. § 35-11-1101.

I. Upper Control Limits

Monitor wells should have Upper Control Limits established on a well by well basis for an R&D. A wellfield average may be used for a commercial permit with Upper Control Limits determined using the procedures outlined in Reference Document 4, Upper Control Limit Calculation

Table of Contents
Reference Documents

Reference Document 1: General Information

This Reference Document contains information not directly related to an in situ permit or the mine operation but includes process related and other general information related to in situ permits. This Reference Document contains the following attachments:

Table of Contents for Reference Document 1

Attachment I — Definitions for Purpose of the Guideline

If the definition is from the Act or LQD R&R, a citation is given. Any text after a citation has been added to further explain how the term is used for in situ mining.

1. "Abandoned well" means a well whose use has been permanently discontinued or which is in a state of disrepair such that it cannot be used for its intended purpose or for observation purposes.

2. "Acidization" means the injection (at pressures less than formation fracturing pressures) of acid through the borehole or "well" into a "formation" to increase permeability and porosity.

3. "Adjacent lands" means all lands within ½ mile of the proposed permit area (W.S. §35-11-103(e)(vii)). Also known as "adjacent areas."

4. "Affected land" means the area of land from which overburden is removed, or upon which overburden, development waste rock or refuse is deposited, or both, including access roads, haul roads, mineral stockpiles, mill tailings excluding uranium mill tailings, and mill facilities, within the Nuclear Regulatory Commission (NRC) license area, impoundment basins excluding uranium mill tailings impoundments, and all other lands whose natural state has been or will be disturbed as a result of the operations (W.S §35-11-103(e)(xvi)).

5. "Aquifer" is a zone, stratum, or a group of strata that stores and transmits water in sufficient quantities for a specific use. LQD NonCoal R&R Chapter 1, Section 2(g): Note: Sufficient quantities generally means ½ gallons per minute (gpm) sustained for 24 hours.

6. "Annular space" means the space between the well casing and the borehole or the space between two or more strings of well casing.

7. "Baseline" means the constituents or parameters and the concentrations or measurements which describe water quality and quantity variability prior to the injection of recovery fluid (LQD R&R Chapter 11)

8. "Best Practicable Technology (BPT)" means a technology based process justifiable in terms of existing performance and achievability (in relation to health and safety) which minimizes, to the extent safe and practicable, disturbances and adverse impacts of the operation on human or animal life, fish, wildlife, plant life and related environmental values. W.S. §35-11-103(f)(i).

9. "Cementing" or "Sealing" means the operation whereby a cement slurry or other approved material is pumped into a drilled hole and/or forced into a well's annulus between the borehole and the casing. "Sealing materials" are materials that are stable, have very low to no permeability and possess minimum shrinking properties such that they are optimal sealing materials for well plugging and drill hole abandonments.

10. "Compliance Schedule" means a schedule of remedial measures included in a permit including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with the applicable statutes and regulations. LQD R&R Chapter 11.

11. "Confidential records and trade secrets" means for purposes of in-situ mining operation or in-situ research and development licensing activities:

    a. Information pertaining to the analyses of the chemical and physical properties of the mineral coal or production zone (excepting information regarding such mineral or elemental content which is potentially toxic in the environment) may be kept confidential in accordance with W.S. § 35-11-1101(a);

    b. Information pertaining to the mineral ~~coal~~ or production zone seam itself, except as to any person who demonstrates to the satisfaction of the Director an interest which is or may be adversely affected by the decision to hold such information confidential; and

    c. Information relating to in situ research and development operations which concerns privileged commercial or financial information relating to the competitive rights of the person intending to conduct the in situ operations.

12. "Conventional mine" means an open pit or underground excavation for the production of minerals.

13. "Excursion" means any unwanted and unauthorized movement of recovery fluid out of the production zone as a result of in situ mining activities. W.S. §35-11-103(f)(ii).

14. "Exempted Aquifer" means an aquifer or its portion that meets the criteria in the definition of "underground source of water" but which has been exempted according to the procedures of LQD R&R Chapter 11.

15. Facilities

    a. Permanent or Long-Term Facilities - means office complexes, satellite buildings, main plant facility areas, wellfield headerhouse buildings, construction equipment, evaporation ponds, and oxygen and other gas or chemical storage areas.

    b. Temporary Structures and Storage Areas - means those structures or areas used to support short term construction (less than six months) activity. These activities include equipment (cement, bentonite, piping, vehicles, trailers, etc.) storage, lay-down or staging areas

16. "Fault" means a surface or zone of rock fracture along which thre has been displacement.

17. “Groundwater Restoration”. means the condition achieved when the quality of all groundwater affected by the injection of recovery fluids is returned to a quality of use equal to or better than, and consistent with the uses for which the water was suitable prior to the operation by employing the best practicable technology. W.S. §35-11-103(f)(iii).

18. “Land uses” means specific uses or management-related activities, rather than the vegetation or cover of the land. Land uses may be identified in combination when joint or seasonal uses occur.

    a. “Cropland” means lands used for the production of adapted crops for harvest, alone or in a rotation with grasses and legumes, and includes row crops, small-grain crops, hay crops, nursery crops, orchard crops, and other similar specialty crops.

    b. “Pastureland” is land used primarily for the long-term production of adapted, domesticated forage plants to be grazed by livestock or occasionally cut and cured for livestock feed.

    c. “Grazingland” includes rangelands and forestlands where the indigenous native vegetation is actively managed for grazing, browsing, occasional hay production and occasional use by wildlife. (W.S. § 35-11-103(e)(xxvii))

    d. “Forestry” means land used or managed for the long-term production of wood, fiber, or wood-derived products.

    e. “Residential” includes single and multiple-family housing, mobile-home parks, and other residential lodgings.

    f. “Industrial commercial” is lands used for:

        i. Extraction or transformation of materials for fabrication of products or long-term storage of products. This includes such short-term uses as petroleum refining and oil and gas production.
        ii. Retail or trade of goods or services, including hotels, motels, stores, restaurants, and other commercial establishments.

    g. “Recreational” is lands used for public or private leisure activities, including developed recreational facilities such as parks, camps, and amusement areas, as well as areas for less intensive uses such as hiking, canoeing, and other undeveloped recreational uses.

    h. “Fish and wildlife habitat” means land dedicated wholly or partially to the production, protection, or management of species of fish or wildlife. (W.S. § 35-11-103(e)(xxvi))

    i. “Developed water resources” includes lands used for storing water for beneficial uses such as stock ponds, irrigation, fire protection, flood control, and water supply.

19. “License Area” means, with respect to an In Situ Research and Development Testing License, an area described in the license application within which all affected land and water is contained. LQD Chapter 11. Unless specifically designated otherwise, the term license area refers to the area covered by an R&D license and not the license to mine or the source material license.

20. “License to Mine for Minerals” means the certification from the administrator that the licensee has the right to conduct mining operations on the subject lands in compliance with the Act; for which a valid permit exist; that he has deposited a bond conditioned on his faithful fulfillment of the requirements thereof; and that upon investigation the administrator has determined the licensed mining operation is with the purposes of the Act. W.S. § 35-11-103(e)(xiii).

21. “Monitor Well” means a well constructed or utilized to measure static water levels and/or to obtain liquid, solid or gaseous analytical samples or other physical data that would be used for controlling the operation or to indicate potential circumstances that could affect the environment. (Chapter 1,Section 2(aj)

22. “Potentiometric Surface” is the surface that coincides with the static level of water in an aquifer. The surface is represented by the levels to which water from a given aquifer will rise under its full head. (Chapter 1,Section 2(aq)

23. “Production Zone” means the geologic interval into which recovery fluids are to be injected or extracted. W.S. §35-11-103(f)(v).

24. “Receiving Strata” means the geologic units within which the production zones are contained. LQD R&R Chapter 11.

25. “Reclamation” includes groundwater restoration. W.S. § 35-11.103(f)(vi)

26. “Recovery Fluid” means any material which flows or moves, whether semisolid, liquid, sludge, gas or other form or state, used to dissolve, leach, gasify or extract a mineral. W.S. §35-11-103(f)(vii)

27. “Responsible Corporate Officer” means:

    a. A president, secretary, treasurer, or vice president of the corporation in charge of a principal business functions, or any other person who performs policy or decision-making functions for the corporation, or

    b. The manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures, or

    c. In the case of a partnership or a sole proprietorship, by a general partner or the proprietor, respectively. LQD R&R Chapter 11.

28. “Reverse Osmosis” or RO is a water filtration method that uses a pressurized system and membrane to remove many types of ions and molecules.

29. Roads

    a. Primary Access Road - means a road constructed (topsoil salvage, culverts, etc.) at an ISL facility that may necessitate cut and fill with gravel surfacing, or other material, and is constructed for long-term use. These roads are typically used for routine access to the main facility areas including office areas, satellite facilities and include all roads as defined in Chapter 1, Section. 2(ax)(i).

    b. Secondary Access Road - means a road constructed (topsoil salvage, culverts, etc.) at an ISL facility that provides access to wellfield headerhouses with limited cut and fill construction. These roads are used for long-term traffic. They may be surfaced with aggregate or other appropriate material.

    c. Temporary Wellfield Access Road - means a road used at an ISL facility for temporary access to drilling sites, wellfields in development, or ancillary areas assisting wellfield development. These roads are temporary in nature (generally in use 2-6 months) and consist of designated two track trails where the land surface is not typically modified to accommodate the road. If blading or surfacing of these types of roads becomes necessary, they shall no longer be deemed temporary. Such roads must meet the construction and other requirements of a primary or secondary access road.

    d. Well Access Roads (i.e., used to access production, injection, and monitor wells within the monitor ring or wellfield pattern area) - means roads used at an ISL facility for access to wells within the wellfield. These roads are used for limited travel and consist of designated two-track trails where the land surface is not modified to accommodate the road. They are used until they are no longer needed to access the desired location within the wellfield. If blading or surfacing of these roads becomes necessary, they shall no longer be deemed a well access road and be required to meet the construction requirements of a primary or secondary access road.

30. “Satellite facility” means a uranium recovery or ion exchange facility set up at a remote distance from a central processing plant (CPP).

31. Spill - also known as a release. “Release” includes, but is not limited to, any sudden spilling, leaking, pumping, pouring, emptying, emitting, discharging, dumping, addition of, escaping, leaching, or unauthorized disposal of any oil or hazardous substance which enters, or threatens to enter, waters of the state. WQD R&R Chapter 4, Section 3(d).

32. “State Decision Document” serves as a summary of, or reference to, all terms and conditions within an approved in situ mining permit application, an approved Research and Development Testing License application, or an approved application to revise a permit or Research and Development Testing License. This document is compiled by the Administrator and provides a summary of, or reference to, all UIC related terms and conditions, compliance provisions, and monitoring requirements included in the permit or Research and Development Testing License. LQD R&R Chapter 11. The format for a State Decision Document (SDD) can be found in Reference Document 1, General Information, Attachment VIII.

33. “UCL or Upper Control Limit" means a value greater than the maximum value c of a chemical or physical parameter that can be attributed to natural fluctuations and analytical variability. UCL parameters and amounts are determined from baseline sampling and agreed upon by the administrator and the operator prior to initiation of mining UCLs are used to determine when there is movement of recovery fluid out of authorized areas or unapproved changes to a chemical or physical parameter. For certain parameters, such as pH, a UCL may be defined as an acceptable range of values. LQD Chapter 11.

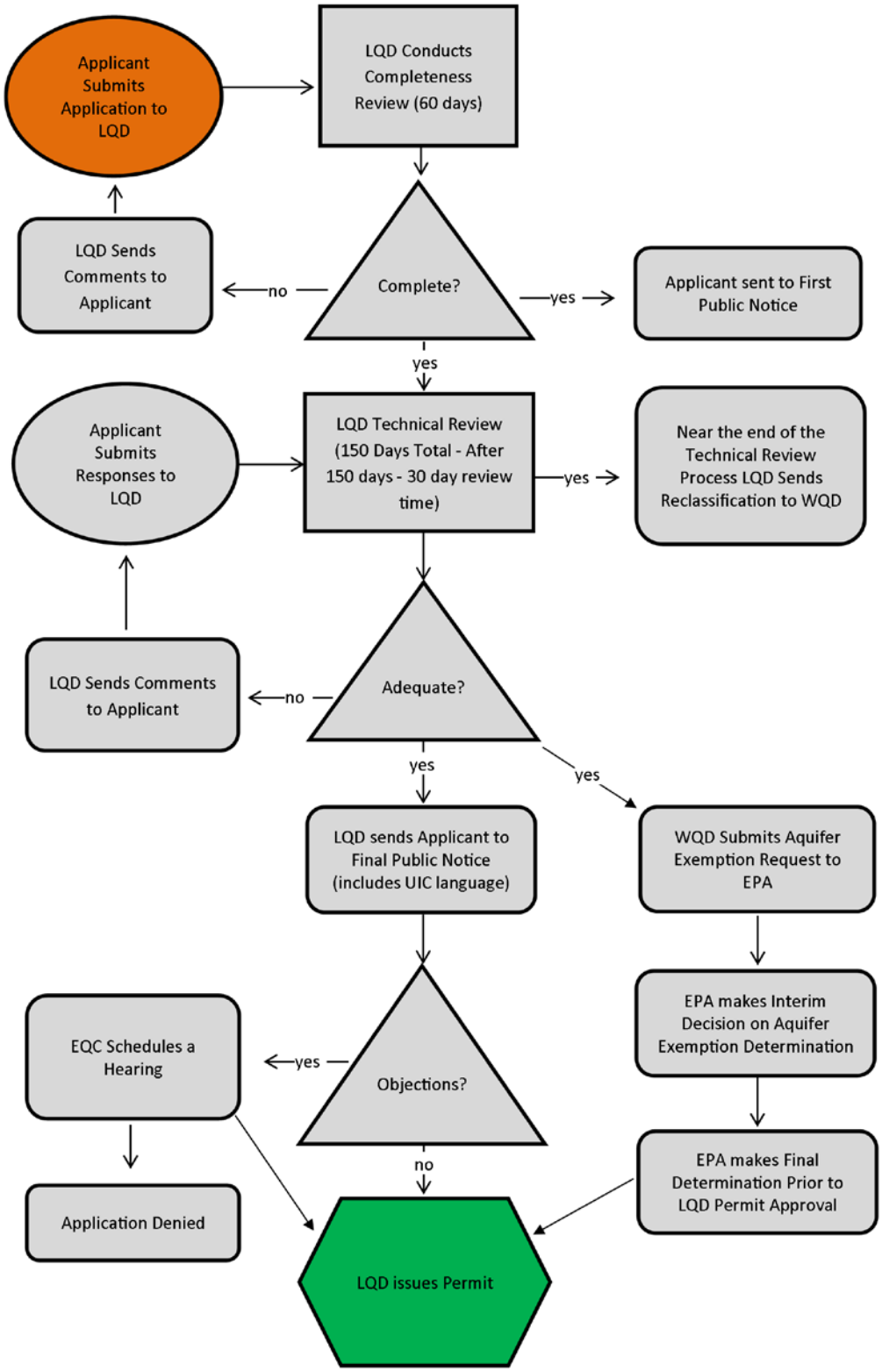
34. “Waters of the state” means all surface and groundwater, including waters associated with wetlands, within Wyoming. W.S. §35-11-103(c)(vi).

35, “Wellfields”

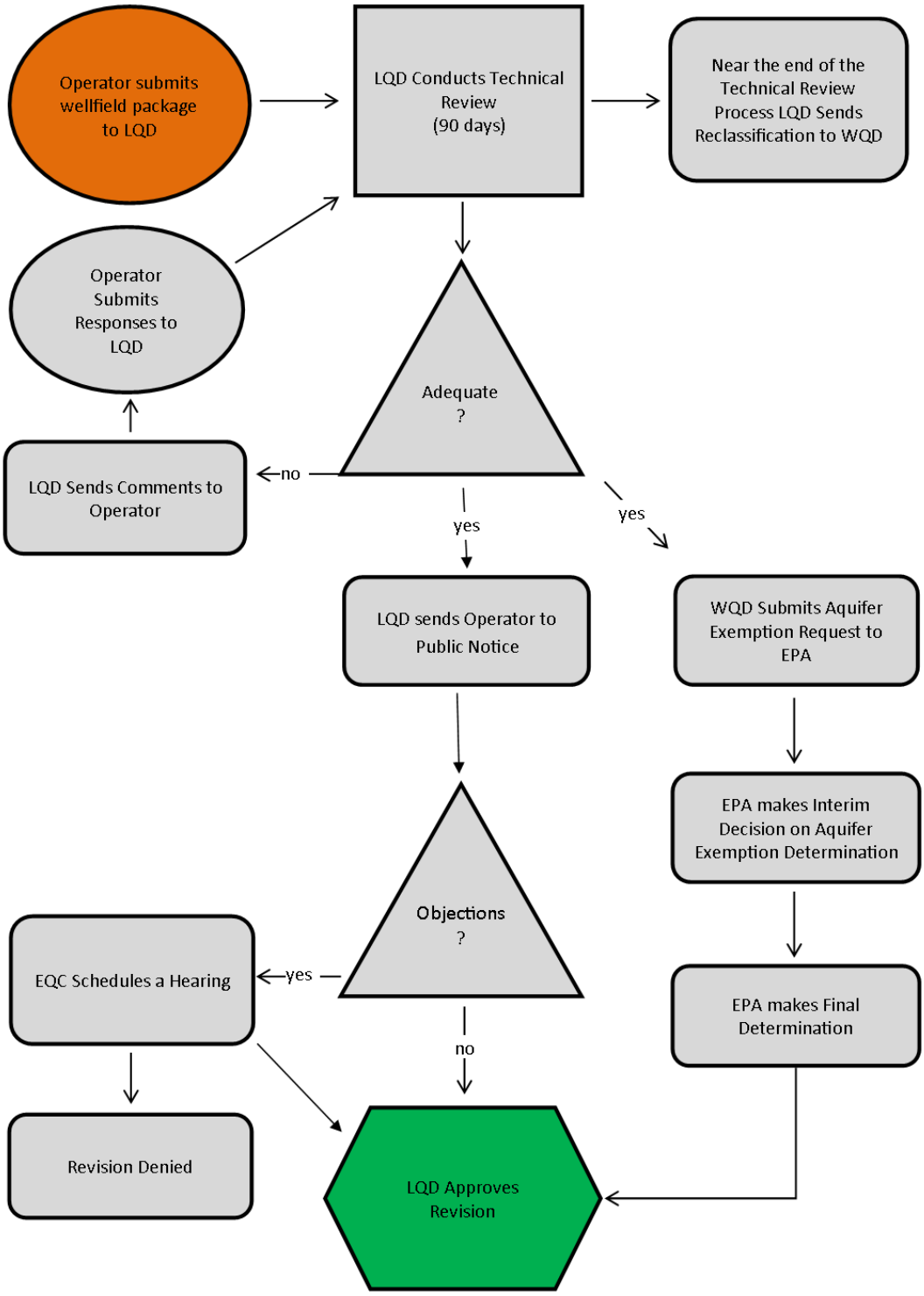
    a. “Wellfield Area” means the surface area overlying the injection and recovery zones. This area may be all or a portion of the entire area proposed for the injection and production of recovery fluid throughout the life of the mine. LQD Chapter 11 interprets this to include everything within and including the monitor well ring.

    b. “Wellfield Pattern Area - means the area within the wellfield that contains the wellfield patterns of injection and production wells, headerhouses, and associated pipelines and buried electrical lines. The wellfield pattern area does not extend out to the monitor well ring.

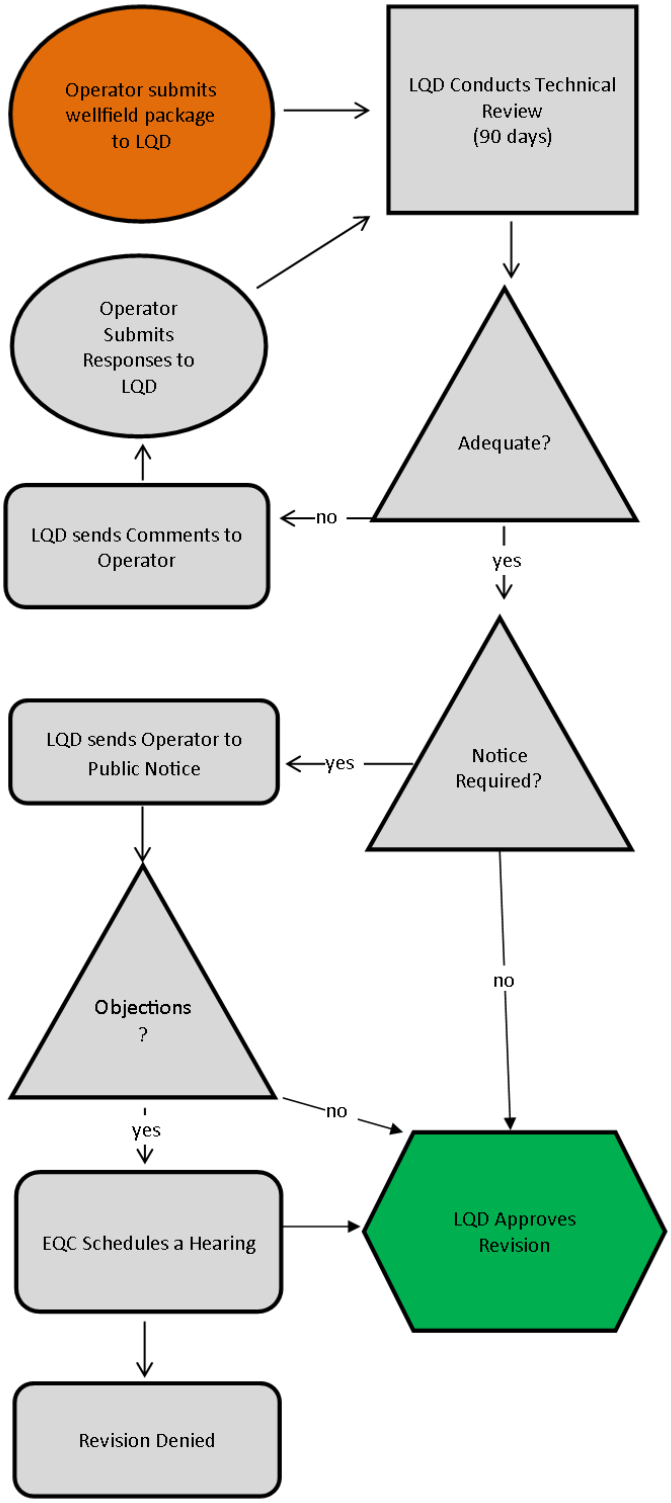
Attachment II: Permit Application Review Process Flowchart



Wellfield Package that *does* Enlarging to Aquifer Exemption Boundary Review Process Flowchart



Wellfield Package that *Does Not* Enlarge the Aquifer Exemption Boundary Review Process Flowchart



Attachment III: Permit Application Format and Organization Checklist

Introduction/Format

A single application (consisting of 2 copies, 3 copies if BLM surface or mineral) (note: for operations in District I, the number of copies are 1 and 2 respectively) for a permit to mine or a research and development testing license should be submitted to the Administrator of the Land Quality Division. It should consist of five sections as described below. The administrator requires the format and order of all applications follow this guideline to promote consistency and efficiency of staff review.

The first section of the application is the adjudication file, containing the "Permit to Mine" and "License to Mine" forms, bonds, notification, receipts, consent forms, and Appendices A through C. Items in Section II, A through H of the adjudication file section should be submitted in a loose form and not be bound. This information will be placed in the File-1-Of. The File -1-Of is the first file folder that LQD maintains in their file cabinets for the permit. The remaining items of the adjudication section should be submitted as discussed in the next paragraph.

The second section of the application contains baseline supporting information. The third thru fifth sections are the aquifer exemption, mine or operations plan and the reclamation plan, respectively. Information for these sections should be submitted as follows:

- In loose leaf 3 ring binders to allow easy substitution of pages for revisions or additions.
- The binders should be no larger than 4 inches thick.
- The text should be printed on 8.5 x 11 inch paper with standard margins and unique page numbers on all pages.
- The pages should also include the submittal or revision date. The paper should be about 20 pound weight or better.
- All figures and tables larger than 8.5 x 11 inch paper should be folded to fit into the application and should be physically attached to the appropriate location in the application or folded into a labeled map pocket.
- All figures and tables should be numbered and referenced in the text.
- In addition to the hard copy, the applicant shall submit water-quality and water-quantity data in an electronic format.

The applicant is strongly encouraged not to repeat information from different parts of the application with the exception of Appendix C. For example, Appendix D-5 will contain a thorough discussion of the geology and ore body. The mine operations plan requires a description of the ore body that is going to be mined. The applicant should not repeat the entire discussion in D-5 in the mine operations plan. A summary and reference to D-5 will suffice along with any additional detail not included in D-5 that specifically addresses the ore body to be mined.

Each 3-ring binder should have its own table of contents for that volume. Volume 1 should contain a master table of contents that covers the entire application. Each binder or volume should be clearly labeled and include the sections of the application included in that volume. (i.e., Nuclear Power, Inc. Bright Lights Project, Big County, Wyoming , Volume 3, Appendix D-6 through Appendix D-11) This information should be placed on the front of the binder and on the spine.

The Land Quality Division will be the primary reviewing agency for WDEQ. The Water Quality Division will review specific portions of the application to reclassify the groundwater near the end of the LQD Technical Review. A single permit or license will be granted by the department upon the recommendation of the LQD administrator. The application should contain a section devoted to the information required to support the aquifer reclassification. Near the end of the Technical Review process, LQD will forward the section to WQD. WQD will review this information only to the extent to allow the classification of the groundwater. When the application is deemed technically adequate, the LQD informs the operator to initiate final public notice. This notice will also contain the necessary information for the aquifer exemption. When the LQD declares the application to be technically adequate, the WQD will forward this section/package to the U.S. EPA with a request for an aquifer exemption. The U.S. EPA will issue an interim decision within 45 days. If there are no objections to the LQD public notice process, the U.S. EPA interim decision becomes final. If there are objections, the U.S. EPA will await resolution of the objections before deciding if the interim decision requires modification. Additional information concerning the aquifer exemption can be found in Reference Document 7.

Organization

The following is a listing of the major headings for the application. It is not meant to be all-inclusive but to give the applicant guidance of the content and the preferred order of the application. It is anticipated that appropriate subheadings will be added by the applicant to address all the items discussed in this guideline.

File-1-Of: The following adjudication materials shall be submitted in a loose format in the following order: (the applicant may wish to place a second copy of all but number 3 in the 3-ring binders with the rest of the application).

1. Form 1 UIC
2. Form 3
3. Proof of Publication (to be filed later once notified by LQD to commence the public notice process)
4. Bond Instrument (to be filed once dollar amount is set by LQD
5. Appendix C Legal Land Description of Proposed Permit Area
6. Surface Owner Consent.

Three-Ring Binders. The–other application materials are submitted in a 3-ring binder. Avoid placing too much material in a binder such that it will not close properly. This creates a potential

for pages to come loose and be misplaced or lost. The binders should be no more than 4 inches thick.

Note: this is not a table of contents of the guideline but a suggested outline of the permit document.

Part I Adjudication

- ☐ **Forms and Information Submitted In Loose Form**
  - ☐ Form 1 UIC
  - ☐ Form 3
  - ☐ Permit Fees
  - ☐ Proof of Publication (to be filed later once notified by LQD to commence the public notice process). Original in file folder File-1-Of. If requested, a copy is inserted in the volume.).
  - ☐ Reclamation Bond Instrument (to be filed once dollar amount is set by LQD)
  - ☐ Appendix C Legal Land Description of Proposed Permit Area
  - ☐ Surface owner consent
- ☐ **Appendices Submitted in 3-Ring Binders**
  - ☐ Certification page required by LQD R&R Chapter 11
  - ☐ Appendix A (owners within permit area)
  - ☐ Appendix B (owners within ½ mile)
  - ☐ Appendix C (duplicate of what is in File-1-Of)
  - ☐ Surface Owner Consent
  - ☐ Appendix E (General site information including regional geography)
  - ☐ Other permits or approvals (Only a table is required)
  - ☐ Hazardous Waste Management program under RCRA;
  - ☐ UIC program under the Safe Drinking Water Act (as it pertains to wells other than Class III wells);
  - ☐ WYPDES program under the Clean Water Act (CWA);
  - ☐ Prevention of Significant Deterioration (PSD) program under the Clean Air Act (CAA);

- ☐ Nonattainment program under the CAA;
- ☐ National Emission Standards for Hazardous Pollutants preconstruction approval under the CAA;
- ☐ Dredge and fill permits under Section 404 of the CWA;
- ☐ Existing Source Material License;
- ☐ State Engineer permits;
- ☐ Documentation of County Zoning Compliance; or
- ☐ Other relevant environmental permits, including state permits.

Part II Baseline

- ☐ **Appendix D-1 History and Land Use**
- ☐ **Appendix D-3 Cultural and Paleontological Resources.**
- ☐ **Appendix D-4 Climatology**
  - ☐ Annual precipitation
  - ☐ Average wind speed
  - ☐ Temperature
  - ☐ Additional information found in NUREG 1569 Section 2.5.1
- ☐ **Appendix D-5 Hydrogeology and Geology**
  - ☐ Regional setting
  - ☐ Regional geology
  - ☐ General geologic setting
  - ☐ Regional geologic map and cross section(s)
  - ☐ Regional hydrostratigraphy
  - ☐ Regional structural Geology
  - ☐ Regional Surficial Geology
  - ☐ Regional hydrogeology
  - ☐ Regional potentiometric surfaces
  - ☐ Regional groundwater recharge and discharge

- ☐ Regional hydraulic connection of aquifers
- ☐ Regional water quality
- ☐ Permit Area Hydrogeology
- ☐ Site geology
- ☐ Site geology and hydrostratigraphy
- ☐ Isopach maps
- ☐ Cross sections
- ☐ Site structural geology
- ☐ Ore and rock mineralogy and geochemistry
- ☐ Site hydrogeology
- ☐ Potentiometric surfaces
- ☐ Site groundwater recharge and discharge
- ☐ Site-specific groundwater and surface water interactions
- ☐ Site-specific information on past, current and anticipated future water use (for Uranium or thorium facilities only)
- ☐ Hydraulic properties of the aquifer(s) and aquitard(s)
- ☐ Wells and drill holes within and adjacent to the permit
- ☐ Wells
- ☐ Drill holes and abandoned wells
- ☐ Site water quality
- ☐ Monitoring network and parameters
- ☐ Methods
- ☐ Sampling results (field and laboratory)
- ☐ Statistical analysis and water-quality relationships and trends
- ☐ Premining Groundwater Classifications
- ☐ QA/QC procedures
- ☐ General mine unit hydrogeology

- ☐ Seismology (Note: although this is a requirement for uranium or thorium recovery facilities it logically goes here. The applicant has the option of including this information in D5.)

- ☐ Other information required in NUREG 1569 Section 2.6.1.

☐ **Appendix D-6 Surface Hydrology**

- ☐ Regional surface hydrology description
- ☐ Local surface hydrology permit area description
- ☐ Watershed and stream channel characterization
- ☐ Assessment of typical seasonal ranges and averages, and historical extremes for levels of surface-water bodies and aquifers (per NUREG 1569 Section 2.7.1(5))
- ☐ Water quantity measurements
- ☐ Baseline water quality
- ☐ Surface water rights
- ☐ Surface water and groundwater interactions
- ☐ Potential for erosion and flood damage to facilities
- ☐ Erosion Control Measures

☐ **Appendix D-7 Soils**

- ☐ Permit area order 3 survey
- ☐ Affected area order 1-2 survey

☐ **Appendix D-8 Vegetation**

- ☐ Introduction
- ☐ Methods
- ☐ Mapping of plant communities
- ☐ Cover sampling discussion/details
- ☐ Selection and Sampling REFAs and/or EXREFAs
- ☐ Species list
- ☐ Data for Cropland or Hay and

- ☐ Cover sampling discussion/details
- ☐ Threatened and endangered species
- ☐ Noxious weeds
- ☐ Results and discussion
- ☐ Literature cited
- ☐ Raw Data
- ☐ Photographs

☐ **Appendix D-9 Wildlife**

- ☐ Introduction
- ☐ Documentation of WG&F and USFWS consultation
- ☐ Habitat
- ☐ Species list
- ☐ Sage Grouse
- ☐ Survey Methods and results

☐ **Appendix D-10 Wetlands Habitat**

- ☐ Wetlands delineation
- ☐ Comparison to proposed disturbances
- ☐ Mitigation information
- ☐ Army Corps of Engineers documentation

☐ **Appendix D-11 Background Radiological Surveys**

- ☐ Gamma survey of all lands required by W.S. § 35-11-428(b)(i).
- ☐ Other information required in NUREG 1569 Section 2.9.1.

☐ **Appendix D-12 Draft Statement of Basis**

☐ **Appendix D-13 Population Distribution and Food Sources**

- ☐ Information required in NUREG 1569 Section 2.3.1.

Part III Aquifer Reclassification/Exemption and Assessment of Impacts

All permit applications must contain a section concerning the Aquifer Exemption (see LQD R&R Chapter 11). All proposed wellfields must be included in the request. The information below gives a summary of the required information. A more detailed discussion can be found in Reference Document 7, Aquifer Reclassification Exemption.

- ☐ **Exemption Justification and Documentation**
  - ☐ Geographic extent of aquifer to be reclassified/exempted
  - ☐ Aquifer properties
  - ☐ Name of formation and aquifers
  - ☐ Elevation of each aquifer
  - ☐ Average thickness and range for each aquifer
  - ☐ Confining units above and below
  - ☐ Hydraulic properties of the aquifers
  - ☐ Geologic properties
  - ☐ Regional geology
  - ☐ Site geology
  - ☐ Premining groundwater classification
  - ☐ Current use information
  - ☐ Ambient groundwater data
  - ☐ Commercial Productivity of the ore deposit
  - ☐ Amenability to mining
  - ☐ Description of mineralized zone
  - ☐ Process description
- ☐ **Assessment of Impacts**
  - ☐ Include consumptive use amounts
  - ☐ 5-foot drawdown maps for all affected aquifers
  - ☐ Assessment of impacts to specific resources such as wells, ponds, wetlands, etc.

- ☐ Potential impacts to offsite groundwater
- ☐ Steps to mitigate potential impacts.

Part IV Mine Operations Plan

- ☐ **Introduction**
- ☐ **Site Description, Facilities Layout and maps**
  - ☐ Facilities - detailed plan with map including access
  - ☐ Central processing and satellite plants
  - ☐ Other Buildings
  - ☐ Fencing and access control
  - ☐ Chemical Storage Facilities
  - ☐ Process- related chemicals
  - ☐ Nonprocess-related chemicals
  - ☐ Design throughput and production
  - ☐ Roads:
  - ☐ description including existing, constructed, upgraded, and nonconstructed
  - ☐ location and classification,
  - ☐ culvert location and size
  - ☐ Stream crossing details.
  - ☐ Proposed wellfields, including monitor well ring located on a map.
  - ☐ Utility corridors
  - ☐ both existing and proposed
  - ☐ Powerline raptor protection
  - ☐ Proposed pipeline locations
  - ☐ Deep disposal wells.
  - ☐ Well construction details
  - ☐ Monitoring and instrumentation

- ☐ Reporting requirements
- ☐ Ponds
- ☐ Location map
- ☐ Evaportranspiration
- ☐ Plan view and cross section
- ☐ Design details
- ☐ Liner systems
- ☐ leak detection details
- ☐ QA/QC procedures during construction
- ☐ Wildlife mitigation measures
- ☐ Documentation of SEO approval
- ☐ Drainage Plan
- ☐ Location of long-term topsoil/subsoil stockpiles and header houses

☐ **Topsoil Salvage and Protection Plan and Temporary Stabilization/Seeding Plan**

- ☐ Soil management plan
- ☐ Protection from excessive compaction
- ☐ During facilities construction
- ☐ During road construction
- ☐ Stockpile design, capacity, protection and locations
- ☐ Protection during wellfield delineation and construction
- ☐ Pipeline installation
- ☐ Designated travel corridors, colocation of pipelines, and utilities
- ☐ Access during wellfield development
- ☐ Protection during wellfield operations
- ☐ Map of areas to be salvaged, disturbed but not salvaged
- ☐ Erosion/sedimentation control measures

- ☐ Procedures to protect topsoil and subsoil
- ☐ Estimated volume to be salvaged and stockpiled
- ☐ Temporary stabilization/seeding of disturbed areas
- ☐ Areas to be seeded
- ☐ Temporary seed mix
- ☐ Seed bed preparation
- ☐ Planting methods and equipment
- ☐ If mulch will be used
- ☐ WQD storm water BMPs (not the whole permit)

☐ **Description of Mining**

- ☐ Production zone description,
- ☐ Recovery fluids or lixiviant description
- ☐ Chemistry of mining
- ☐ Development and delineation drilling

☐ **Wellfield Design and Construction**

- ☐ Wellfield Design
- ☐ Typical Pattern(s) layout and dimensions,
- ☐ Monitor well network and Map
- ☐ Monitor well completion/screened interval
- ☐ Modeling method for determining monitor well spacing
- ☐ Trend wells
- ☐ Hydraulic communication
- ☐ Special hydrogeologic features
- ☐ Map of monitoring network
- ☐ Upper Control Limits calculation methods
- ☐ Headerhouse design

- ☐ Fluid control methods
- ☐ Spill detection methods
- ☐ Monitoring systems
- ☐ Alarm systems
- ☐ Topsoil salvage and protection during construction
- ☐ Cross section and plan view during typical well installation
- ☐ Cross section and plan view during typical pipeline installation
- ☐ Well Installation and Completion
- ☐ Completion details for all monitor wells
- ☐ Typical completion details for injection and production wells
- ☐ Well development
- ☐ Mechanical Integrity Testing details
- ☐ Well Corrective Action Plan
- ☐ Notice of completion of construction. See C-12 Section 11b
- ☐ Other information required in NUREG 1569 Sections 3.1.1 and 3.2.1.

☐ **Wellfield Package Information**

- ☐ Conceptual wellfield package information

☐ **Wellfield Operational Control and Monitoring of Wellfield**

- ☐ Fracture and fluid pressure
- ☐ Procedures to assure installation of wells will not result in hydraulic communication.
- ☐ Describe procedures to verify communication with monitor wells
- ☐ Excursion verification, reporting and corrective action
- ☐ Wellfield leak detection and instrumentation
- ☐ Wellfield monitoring during mining and excursions
- ☐ Introduction
- ☐ Required statutory language

- ☐ Frequency of monitoring
- ☐ Parameters to be monitored

☐ **Wellfield Method of Operation**

- ☐ Mining schedule
- ☐ Injection rate and pressure
- ☐ Operational Control of injection fluids
- ☐ Water balance
- ☐ Production only
- ☐ Concurrent production and restoration
- ☐ Restoration only
- ☐ Plant make up water
- ☐ Definition of completion of mining

☐ **Excursion Response**

- ☐ Corrective actions plan
- ☐ Reporting procedures
- ☐ Excursion control actions
- ☐ Other information required in NUREG 1569 Section 3.3.1.

☐ **Well Maintenance, Repair and Abandonment**

- ☐ Wells capped or covered
- ☐ Wells marked
- ☐ Area around well clear of brush and debris
- ☐ Equipment serviced and maintained
- ☐ MIT methods and schedule
- ☐ Provide corrective action plan for MIT failure, and improperly sealed, completed and abandoned wells
- ☐ Describe impermeable abandonment material
- ☐ Casing cut off a minimum of two feet below ground surface

- ☐ A permanent tag showing well number and other information affixed to top of plug.

☐ **Wastewater Production and Disposal Capacity**

- ☐ Type, (pump tests, monitor well purge water, plant waste streams, etc.) where produced, and quantity
- ☐ Disposal locations and capacity
- ☐ Deep disposal wells
- ☐ Evaporation ponds
- ☐ Land application
- ☐ Surface Discharge
- ☐ Other Methods approved by the Administrator

☐ **Pond Inspections, Monitoring, Leak Detection and Control**

☐ **Surface Spills and Leaks– Potential and Proposed Actions**

- ☐ Spill/release potential
- ☐ Spill/release prevention plan
- ☐ Proposed spill/release response
- ☐ Reporting commitments including cause, amount, Horizontal and vertical extent, location, etc.
- ☐ Clean-up standards
- ☐ Clean-up of not reportable spills/releases

☐ **Other Wastes and Disposal All waste streams must be listed, identified and characterized.**

- ☐ Water from pump tests
- ☐ Other liquid wastes
- ☐ Radiological contaminated liquid wastes
- ☐ Hazardous wastes
- ☐ Domestic liquid wastes
- ☐ Solid Wastes

- ☐ Type
- ☐ Amount
- ☐ Disposal
- ☐ Radionuclide contaminated wastes
- ☐ Nonradionuclide contaminated wastes
- ☐ Effluent control systems for uranium or thorium recovery facilities
  - ☐ Information required in NUREG 1569 Sections 4.1.1 and 4.2.1

☐ **Subsidence**

☐ **Wildlife Monitoring and Mitigation Plan**

- ☐ Big game
- ☐ Sage grouse
- ☐ Raptors
- ☐ Migratory birds
- ☐ Threatened and endangered species

☐ **Mining Schedule**

☐ **Summary and Table of Required Monitoring and Reporting**

☐ **Operations (For Uranium or Thorium Facilities Only)**

- ☐ Information required in NUREG 1569 Sections 5.1.1, 5.2.1, 5.3.1, 5.4.1, 5.5.1, 5.6.1, 5.7.1.1, 5.7.2.1, 5.7.3.1, 5.7.4.1, 5.7.5.1, 5.7.6.1, 5.7.7.1 and 5.7.9.1. This does not include NUREG 1569 Section 5.7.8.

☐ **Radiological Environmental Effects (For Uranium or Thorium Facilities Only)**

☐ Information required in NUREG 1569 Sections 7.3.1.1.1, 7.3.1.2.1, 7.3.1.3.1, 7.3.1.4.1 and 7.3.1.5.1.

☐ **Effects of Accidents (For Uranium or Thorium Facilities Only)**

- ☐ Information required in NUREG 1569 Section 7.5.1.

☐ **Drill Holes**

- ☐ Cover all drill holes with in the permit area including geotech holes

- ☐ Practices, procedures and techniques to abandon holes
- ☐ Reporting commitments

☐ **Confidential Information (W.S. 35-11-1101)**

☐ **Summary and Table of Required Reporting**

Part IV Restoration/Reclamation Plan

☐ **General Restoration/Reclamation Schedule**

- ☐ Reclamation Schedule
- ☐ List of proposed wellfields
- ☐ Map of restoration sequence
- ☐ Proposed time schedule

☐ **Groundwater Restoration**

- ☐ Introduction
- ☐ Statement of best practicable technology (at permit approval)
- ☐ On site research & development activities
- ☐ Comparison to other ISL sites.
- ☐ Target Restoration Values
- ☐ How they are established
- ☐ Required statutory language
- ☐ Methodologies/process description and chemistry
- ☐ Monitoring network during restoration
- ☐ Restoration volumes and flow rates
- ☐ Pore volume displacement estimate
- ☐ Restoration pore volume displacements
- ☐ Restoration flow rates
- ☐ Restoration fluid disposal
- ☐ Capacity of water/wastewater systems

- ☐ Stability plan
- ☐ Well selection
- ☐ Stability period
- ☐ Data evaluation
- ☐ Documentation of best practicable technology (post-restoration)
- ☐ Type of technology
- ☐ Application of technology
- ☐ Economics
- ☐ Demonstration of restoration success
- ☐ Evaluation of BPT
- ☐ Parameter by parameter water quality evaluation
- ☐ Potential impact on adjacent groundwater
- ☐ Modeling
- ☐ Summary

☐ **Decontamination and Decommissioning Plan**

- ☐ Disposal of buildings and facilities
- ☐ Disposal of toxic materials
- ☐ Pond decommissioning
- ☐ Wellfield decommissioning
- ☐ Soil decontamination
- ☐ Information required in NUREG 1569 Sections 6.2.1, 6.3.1 and 6.4.1.

☐ **Surface Reclamation**

- ☐ Postmining land use
- ☐ Process facilities and road reclamation
- ☐ Deep disposal well surface facilities
- ☐ Contouring and final topography including drainage restoration

- ☐ Wildlife habitat
- ☐ Surface preparation
- ☐ Topsoil application, estimated volumes and replacement depths
- ☐ Revegetation practices
- ☐ Seed mixtures
- ☐ Reseeding methods
- ☐ Special areas
- ☐ Protection of newly seeded areas
- ☐ Erosion control practices during and after reclamation
- ☐ Weed control
- ☐ Evaluation of surface reclamation success
- ☐ Postreclamation and postmining environmental monitoring.

☐ **Restoration/Reclamation Cost Estimate**

☐ **Cost Benefit Analysis (Optional)**

- ☐ Information required in NUREG 1569 Section 9.1

Attachment IV: Maps and Aerial Photographs

I. Maps (Plates, Figures, Diagrams, etc.)

A. Title Block

1. Title Block located in lower right hand corner with the following information as a minimum:
2. Applicant's name
3. Title of map.
4. Permit number if applicable.
5. Date map was drawn (or date of photography, if based from aerial photo).
6. Each date map was revised.
7. Map sheet page number, exhibit number, etc.
8. Scale and contour interval.
9. North arrow.

B. Section, Township, and Range lines and numbers

Must have an accurate delineation of Section, Township, and Range lines and numbers.

C. Permit Boundary

1. The permit boundary must be clearly outlined and identified on all maps.
2. Any amendment areas should be clearly differentiated from the original permit boundary and other amendment boundaries
3. At a minimum, amendment boundaries must be clearly identified on the Appendix C Mine Operations Plan and Restoration/Reclamation maps.
4. All permit and amendment boundaries should agree with the written legal description in Appendix "C" of adjudication files.

D. Legend

Legend clearly describing information on map (all symbols and lines identified).

E. Map Location Key

If only a portion of permit or amendment area is shown, a map location key showing area with respect to total permit or amendment area should be on map.

F. Consecutive Map Sheets

If more than one map sheet is used for a specific subject, each sheet should be numbered consecutively, 1 of 4, 2 of 4, etc.

G. Reference to Other Information

Reference on the map any enlarged view, cross sections, or more detailed information contained elsewhere

H. Contours

1. Contour intervals should normally not exceed ten (10) feet, but will depend on the nature of topography in the area.
2. Contour intervals must be the same for premining and postmining maps.
3. Distinct contour lines with contour elevations identified along the contour lines at a reasonable interval and frequency across the map.

I. Map Clutter

Map sheets should not include excessive information to the point of not being able to clearly depict the features presented. If necessary, additional map sheets should be included to separate information in a rational manner and to accommodate a reasonable map sizes.

J. Map Scale

1. Appendix A, B, C and E maps can be submitted at a scale of 1"=2000'.
2. All other maps must be at a scale of 1"=1000' or greater (e.g., 1"=500'). To show greater detail, scales maybe increased by even multiples of the original scale. For example, for a 1"=1000' scale map, detailed maps should be at 1”=200’, 1”=400 and 1"=500'. To the extent possible the scales should be consistent (also be consistent with annual report maps)
3. Premine and postmine contour maps must be at the same scale and
4. Baseline vegetation and soils maps must be at the same scale.

II. Aerial Photographs

A. Date

Any aerial photographs should be current and show the date the photograph was taken.

B. Edge Distortions

Eliminate edge distortions on mosaics.

C. Additional Information

If used in place of a map, additional information should contain, at a minimum, all information required in items A through G for maps (above).

Attachment V: Format for Submittal of Electronic Data

In addition to the required paper copies, it is recommended that an electronic copy of the entire permit application and supporting documents be submitted to the LQD. Submittal of materials in both paper and electronic format will help expedite the review process. All electronic media will be stored in a secure cabinet in the Records Area in the Cheyenne LQD Office

The LQD has a specific data format that should be followed for certain types of data. For hydrologic monitoring data the following Uranium Mining Data Submission Spreadsheets are available on LQD's website: *http://deq.state.wy.us/lqd/Uranium_Data.htm*

- Uranium Well Details (monitoring well location and completion information)
- Uranium Field Water-Quality Data (surface water and groundwater water-quality data collected in the field)
- Uranium Groundwater Level Data (groundwater elevation data relative to mean sea level)
- Uranium Lab Water-Quality Data (surface water and groundwater water-quality data analyzed in the laboratory)
- Uranium Surface Water Flow Data (streamflow data for surface water monitoring stations)
- Uranium Surface Water Station Details (surface water station location and equipment information)

LQD has developed a spreadsheet for reporting Notices of Completion of Construction (NOCC) for Class III wells, available on LQD's website

- Copy1 of Final Uranium Well Details 1 18 2011.xls

LQD also developed a spreadsheet for reporting mechanical integrity testing (MIT) data, available on LQD's website*:*

- MIT Reporting Data

Additional data that are requested in electronic format include:

- Geophysical Logs for Bore Holes
- Aquifer Pump Test Data
- Spatial data including permit area, key operational features, and monitoring sites
    d. Data should be compatible with ArcGIS or CAD
    e. Data submitted should be in an appropriate and recognized coordinate system. If alternate coordinate systems are used, operators should clearly identify the coordinate system used.

Attachment VI: LQD Permit Maintenance and Records Management

I. Introduction

This attachment outlines LQD's document and records management regarding in situ operations. In situ mining permits may consist of the original application; permit changes; monitoring and other records required to be submitted by the operator; and annual reports. Permit changes consist of new wellfield packages, permit text/commitment changes and permit amendments (the addition of new lands).

A. Approved Permits

Upon approval, the permit binders are placed in the LQD document area. General correspondence is kept in file cabinets organized by the permit number.

B. Permit Changes

Changes submitted by an operator are assigned a Temporary File Number (TFN). TFN documents are located in the LQD document area organized by LQD District but separate from the approved permits. Correspondence regarding TFN's is maintained in a file cabinet organized by the TFN. The significance of the change will dictate if public notice and opportunity for comment is required.

1. Permit text/commitment changes.

   Once approved, the new permit text is placed into the permit document and superseded material is placed in a "Change Volume" along with an index sheet provided by the operator which outlines which pages, tables, figures or maps which have been replaced. The Change Volume may also contain pertinent correspondence.

2. Wellfield Packages

   Wellfield packages are submitted in stand-alone binders containing the necessary information outlined in this Guideline. Wellfield packages are processed as a permit change as outlined above. Wellfield packages may or may not require public notice. Once approved, the binder containing the wellfield package is placed on the shelf next to the approved permit. Some wellfield packages such as a new wellfield not identified in the approved permit, will also change text, maps and figures in the original permit. This additional information will be processed (reviewed and approved) with the wellfield package but will be incorporated into the permit document upon approval. An index sheet outlining the changes will be required similar to item 1 above.

3. Permit Amendments

   When new lands are added to an approved permit, the change will be processed as a permit amendment. Amendments are processed similar to a new permit application. Preferably, the new information is incorporated into the approved

permit upon approval but circumstances may dictate that the amendment be kept as a stand-alone document.

C. Monitoring Reports

The LQD will maintain a volume(s) placed with the permit documents to house all required monitoring reports. Specialized reports such as wellfield releases and excursion reports will be housed in separate binders placed with the permit documents.

D. Annual Reports

Once LQD accepts an annual report it will be placed on the shelf with the permit document.

Attachment VII: Noncoal Statute and Rule and Regulation Citations for the In Situ Completeness Criteria

II. Application Format and Organization - Addendum 3

A. Introduction and Format: W.S. § 35-11-427 and W.S. § 35-11-428(a); Chapter 2, Section 1(a); Chapter 11.

B. Number of copies: Chapter 11 and Section 5 of URP Chapter 4

II. Adjudication—Reference Document 2

Section I – Loose Material

A. Form 1-UIC: Application for Permit to Mine W.S. § 35-11-406(a)(i), (ii), (iii), (vi)(B), (vi)(C) and (vi)(D), (x) and (xi); W.S. § 35-11-428(a).

B. Form 3: License to Mine, W.S. § 35-11-410.

C. Permit Fees

1. New permits

   W.S. § 35-11-406(a)(xii).

2. Amendments

   W.S. § 35-11-406(a)(xii).

3. License to mine

   W.S. § 35-11-410(b)(vi).

4. Byproduct or Source material license

   W.S. § 35-11-2005.

   URP Chapter 7

D. Proof of Publication/Notice W.S. § 35-11-406)(j), URP Chapter 4, Section 15

E. Reclamation Bond W.S. § 35-11-403(a)(ii); W.S. § 35-11-410(c); W.S. § 35-11-417.

1. Types

   W.S. §35-11-410(c); W.S. § 35-11-417; W.S. § 35-11-418

2. Self Bonds Chapter 6, Sec. 2(a); Chapter 11.

3. Individual Instructions

   W.S. §35-11-410(c); Chapter 6, Sec. 2(a).

4. Byproduct or Source material license

   §35-11-2003(e) and URP Chapter 6

F. Appendix "C" W.S. § 35-11-406(a)(vi); W.S. § 35-11-428(a).

1. Legal Land Description

   a. By Legal ¼ ¼ Section

      W.S. § 35-11-406(a)(vi)(A); W.S. § 35-11-428(a); Form 1 UIC, Section 3(c)(i); Form C-1.

   b. By bearing and distance/licensed surveyor

      W.S. § 35-11-406(a)(vi)(A); W.S. § 35-11-428(a); Form 1-UIC, Section 3(c)(i); Form C-2.

   c. No Right to Mine

      W.S. § 35-11-406(a)(vi)(A); W.S. § 35-11-428(a); Form 1-UIC, Section 3(c)(ii).

   d. Lands in other permits and Agreements

      W.S. § 35-11-406(a)(ix); W.S. § 35-11-428(a); Form 1-UIC, Section 3(c)(iii).

2. U.S. Geological Survey topographic map

   W.S. § 35-11-406(a)(viii)

G. Surface Owner Consent

1. Residential or agricultural land owner

   W.S. § 35-11-406(b)(xi).

2. Not covered by above statute

   W.S. § 35-11-410(b)(xii).

3. Near certain structures

   W.S. § 35-11-410(m)(viii)

III. Section II – Material in 3-Ring Binders

A. Certification LQD R&R Chapter 11

B. Appendix "A" (For lands within the permit area) W.S. § 35-11-406(a)(iv); W.S. § 35-11-428(a).

1. List of owners

   W.S. § 35-11-406(a)(iv); Chapter 11.

   a. Surface rights

      W.S. § 35-11-406(a)(iv); Form 1-UIC, Section 3(a).

b. Mineral rights

W.S. § 35-11-406(a)(iv); Form 1-UIC, Section 3(a).

2. Map(s) of above.

W.S. § 35-11-406(a)(ix)(A); Form 1-UIC, Section 3.(b).

C. Appendix "B" (For lands adjacent [within one-half mile] to the permit area)

1. List of adjacent owners

W.S. § 35-11-406(a)(v) and (ix)(A)

a. Surface rights

W.S. § 35-11-406(a)(v) and (ix)(A); W.S. § 35-11-428(a); Chapter 2, Section 1(a) and (b); Form 1-UIC, Section 3(b)(i).

b. Other valid estate of record

W.S. § 35-11-406(a)(v); W.S. § 35-11-428(a);

2. Map(s) of above.

W.S. § 35-11-406(a)(v) and (ix)(A); W.S. § 35-11-428(a);

D. Appendix C (Duplicate of II.C. above) Chapter 2, Section 1(a); Chapter 11.

E. Appendix "E", W.S. § 35-11-406(a)(viii) and (ix); Chapter 2, Section 2(a); Form 1-UIC, Section 3(e).

1. U.S.G.S. Topographic map

W.S. § 35-11-406(a)(viii) and (b)(v); Form 1-UIC, Section 3(c)(iv).

a. Permit boundary

W.S. § 35-11-406(a)(vi); Chapter 2, Section 1(c); Form 1-UIC, Section 3(e).

b. Lands to be affected

W.S. § 35-11-406(a)(vi)(C) and (a)(ix); Chapter 11; Form 1-UIC, Section 3(e)(i).

c. Digital file of boundary

W.S. § 35-11-406(a)(vi)(A); W.S. § 35-11-428(a)

2. Additional information

W.S. §35-11-406(a)(ix); Chapter 2, Section 1(c) and Section 2(a)(i).

a. Roads

W.S. § 35-11-406(a)(ix); Form 1-UIC, Section 3(e)(iii).

b. Drainage areas

W.S. § 35-11-406(a)(ix); Form 1-UIC, Section 3(e)(ii).

c. Adjudicated and owners of water rights

W.S. § 35-11-406(a)(vii); Chapter 11.

d. Well owners

W.S. § 35-11-406(a)(ix); Chapter 11; Form 1-UIC, Section 3.(e)(iii).

e. SEO well permits

W.S. § 35-11-406(a)(ix); Chapter 11.

f. Building information

W.S. § 35-11-406(a)(ix)(B); Form 1-UIC, Section 3(e)(vi).

g. Other mining disturbances

W.S. § 35-11-406(a)(ix); Form 1-UIC, Section 3(e)(iv).

h. Boundaries of Special districts

W.S. § 35-11-406(a)(ix)(D).

i. Drill holes and monitor wells

Chapter 11

F. Listing of Other Permits or Construction Approvals, Chapter 11.

1. RCRA, Chapter 11,
2. Non Class III UIC Wells, Chapter 11.
3. WYPDES, Chapter 11.
4. PSD under Clean Air Act, Chapter 11.
5. Nonattainment under CAA, Chapter 11.
6. CAA Hazardous Pollutants, Chapter 11.
7. Section 404 of CWA, Chapter 11.
8. Source Material License, Chapter 11.
9. State Engineer Permits, Chapter 11.
10. County zoning compliance, Chapter 11.
11. Other, Chapter 11

G. Appendix D, Environmental Baseline Data

H. Appendix "D-1" – History and Land Use.

W.S. § 35-11-428(a)(i); W.S. § 35-11-428(a)(iii)(B); Chapter 2, Section 2(a)(i)(A).

I. Appendix "D-3" – Cultural and Paleontological Resources.

W.S. § 35-11-428(a)(iii)(B); Chapter 2, Section 2(a)(i)(A); Chapter 2, Section 2(a)(i)(J).

J. Appendix "D-4" - Climatology.

W.S. § 35-11-428(a)(i) , Chapter 11.

1. Temperature

   W.S. § 35-11-428(a)(i)

2. Precipitation

   W.S. § 35-11-428(a)(i)

3. Wind

   W.S. § 35-11-428(a)(i)

4. Other LQD recommended
5. Uranium Recovery Program requirements

   URP Chapter 4 Section 9(b)(iv)

K. Appendix "D-5"—Hydrogeology, W.S. § 35-11-428(a)(ii); Chapter 11.

IV. Reference Document 3, Hydrogeology

A. Introduction/Electronic Data, Chapter 2, Section 1(a); Chapter 11

B. Regional Setting

1. Regional Geology

   W.S. § 35-11-428(a)(ii); Chapter 11.

   a. General Geologic Setting
   b. Regional Geologic Map and Cross Sections
   c. Regional Hydrostratigraphy
   d. Regional Structural Geology

2. Regional Hydrogeology

   Chapter 11.

   a. Regional Potentiometric Surfaces
   b. Regional Groundwater Recharge and Discharge
   c. Regional Hydraulic Connection of Aquifers

3. Regional Water Quality
4. Seismology URP Chapter 4 Section 9(b)(iv)

C. Permit area hydrology

1. Site Geology & Hydrostratigraphy Chapter 11.
2. Site Hydrogeology Chapter 11.

3. Wells and Drill Holes Chapter 11.
4. Site Water Quality Chapter 11.

D. Reference Document 10 Premine Sampling

Some of the sections do not have rules so they were not included

V. Quality Assurance Program: Chapter 11.

A. Appendix "D-6" – Surface Water Hydrology. W.S. § 35-11-428(a); Chapter 11

B. Reference Document 5, Surface Water

- I. Introduction and Electronic DataChapter 2, Section 1(a); Chapter 11.
- Regional Surface Hydrology, W.S. § 35-11-406(a)(ix); W.S. § 35-11-428(a).
- Local Surface Hydrology, W.S. § 35-11-406(a)(ix); W.S. § 35-11-428(a).

C. Watershed and Stream Channel Characterization, W.S.§35-11- 406(a)(ix); W.S. § 35-11-428(a), URP Chapter 4 Section 9(b)(iv).

1. Watershed Network
2. Watershed Delineation
3. Stream Characterization
4. Stream Morphology
5. Potential Offsite Changes

D. Water Quantity Measurements Chapter 11.

1. Monitoring station description
2. Monitoring station maintenance
3. Runoff Volume and Peak Flows

E. Baseline Water Quality, Chapter 11.

F. Water Rights , W.S. § 35-11-428(a)(i); Chapter 11.

1. Within the permit
2. Within one-half mile

G. Surface Water and Groundwater Interactions, Chapter 11.

H. Potential for Erosion and Flood Damage to Facilities Chapter 2, Section 2(e).

I. Appendix "D-7" — Soil Assessment.

W.S. § 35-11-406(b)(viii); W.S. § 35-11-428(a)(i); Chapter 11.

1. Soils Survey

   Chapter 11.

2. Salvage depths

   Chapter 11.

J. Appendix "D-8" — Vegetation Inventory.

W.S. § 35-11-406(b), W.S. § 35-11-428(a)(i), Chapter 11.

K. Appendix "D-9" — Wildlife, W.S. § 35-11-406(a)(vii); Chapter 11.

1. Consultation with WY Game and Fish and US Fish and Wildlife Chapter 2, Section 1(f)
2. Sage Grouse, Governor's Executive Order No. 2011-5 dated June 2, 2011.

L. Appendix "D-10" — Wetlands Habitat.

W.S. § 35-11-103(c)(x) through (xvi); W.S. § 35-11-308 through 311.

M. Appendix "D-11" — Baseline Radiological Surveys.

W.S. § 35-11-129(a)(i), URP **Chapter 4 Section 9(b)(ii)**

N. Appendix "D-13" — Population Distribution and Food Sources, URP Chapter 4 Section 9(b)(x)

O. Aquifer Reclassification/Exemption Chapter 11.

VI. Mine (Operations) Plan

A. Introduction

1. Required language W.S. § 35-11-429

B. Site Description and Facilities Layout: W.S. § 35-11-406(b)(ii), (v) and (vii); W.S. § 35-11-428(a)(iii)(C), (D), (F) and (G).

1. Description of Facilities:

   W.S. §35-11-428(a)(iii)(C), Chapter 11, W.S. § 35-11-406(b)(ix) and (xiii), W.S. § 35-11-428(a)(ii)(C), (D).

2. Roads

W.S. § 35-11-406(b)(viii), (xiii) and (xv), W.S. § 35-11-428(a)(i) and (iii)(C) and (D), Chapter 11

3. Proposed wellfields

   Chapter 11

4. Utility corridors

   W.S. § 35-11-406(a)(ix)

5. Proposed pipeline locations

   Chapter 11

6. Deep disposal wells

   Chapter 11

7. Ponds

   Chapter 11

8. Drainage plan

   W.S. § 35-11-428(a)(iii)(D)

9. Processes & Equipment

   URP Chapter 4 Section 9(b)(i)

10. Recovery Plant, Satellite Processing Facilities, Well Fields and Chemical Storage Facilities - Equipment Used and Materials Processed

    URP Chapter 4 Section 9(b)(i)

C. Topsoil Salvage & Protection and Temporary Stabilization/Seeding Plan

W.S. § 35-11-406(b)(viii), (xiv) and (xv), W.S. § 35-11-428(a)(i) and (iii)(C) and (D Chapter 11

1. Best management plan
2. Estimated volume salvaged and stockpiled
3. Temporary Stabilization/seeding of disturbed areas
4. WQD Storm Water BMPs

D. Description of Mining

1. Description of the Ore Zone(s):

   W.S. § 35-11-428(a)(ii)(B); Chapter 11

2. Recovery fluids or lixiviant description

   Chapter 11

3. Chemistry of Mining:

W.S.§ 35-11-428(a)(ii)(B), Chapter 11.

4. Development and delineation drilling

   W.S. § 35-11-428(a)(iii)(A), Chapter 11

E. Wellfield Design, and Construction: W.S. § 35-11-406(b); W.S. § 35-11-428(a)(iii)(A), (C) and (F); Chapter 11.

1. Wellfield Design: 35-11-406(b);

   W.S. § 35-11-428(a)(iii)(A), (C) and (F); Chapter 11.

2. Headerhouse design

   W.S. § 35-11-428(a)(iii)(C), Chapter 11.

3. Topsoil salvage and protection during construction

   Chapter 11, W.S. § 35-11-406(b)(viii), (xiv) and (xv), W.S. § 35-11-428(a)(i) and (iii)(C) and (D), W.S. § 35-11-428(a)(iii)(C), (D) and(G).

4. Well installation and completion

   Chapter 11.

5. Notice of completion of construction

   Chapter 11

F. Wellfield Package Information, Chapter 11

G. Wellfield Integrity: W.S. § 35-11-428(a)(ii)(B), W.S. § 35-11-428(a)(iii)(A)and(F); Chapter 11.

1. Fracture pressure, fluid pressure, and characteristics
2. Procedures to prevent hydraulic communication due to well installation

   W.S. § 35-11-428(a)(iii)(A), Chapter 11.

3. Monitor Well communication
4. Excursion verification
5. Wellfield leak detection
6. Wellfield monitoring

H. Wellfield Methods of Operations: W.S. § 35-11-406(b), W.S. § 35-11-406(b)(xvi); W.S. § 35-11-428(a)(iii)(A), (C), (D), (F); Chapter 11.

1. Mining schedule

   W.S. § 35-11-406(b); W.S. § 35-11-406(b)(xix); Chapter 11;

   a. Proposed wellfields

      W.S. § 35-11-406(b)(xix); W.S. § 35-11-428(a)(iii)(C); Chapter 11.

   b. Map showing sequence of mining

W.S. § 35-11-406(b)(xix); W.S. § 35-11-428(a)(iii)(A), (C), (D), (F); Chapter 11.

c. Proposed time schedule

W.S. §35-11-406(b)(xix); W.S. § 35-11-428(a)(iii)(A), (C), (D), (F); Chapter 11.

d. Expected changes in pressures:

Chapter 11.

e. Capacity of treatment systems correlated to mining and restoration schedules

W.S. § 35-11-406(b)(xix); W.S. § 35-11-428(a)(iii)(A), (C), (D), (F); Chapter 11.

2. Injection rate and pressures:

Chapter 11.

3. Operational Control of Injection Fluids.

a. Proposed injection procedure:

b. Chapter 11.

c. Electronic monitoring

Chapter 11

4. Water Balance calculations:

Chapter 11

5. Definition of Completion of Mining

Chapter 3, Section 3(k)

I. Excursion response

1. Corrective Action Plan

Chapter 11

2. Reporting Procedures

Chapter 11

3. Excursion Control Actions

Chapter 11

4. Instrumentation and Controls

URP Chapter 4 Section 10(c)(iii)

J. Well Maintenance, Repair and Abandonment: W.S. § 35-11-406(b)(xiii); W.S. 35-11-428(a)(iii)(F); Chapter 11.

1. Covered

   Chapter 11.

2. Marked

   Chapter 11.

3. Clear of debris

   Chapter 11.

4. Monitoring equipment maintained

   Chapter 11.

5. Mechanical Integrity Testing:

   W.S. § 35-11-406(b)(ix); W.S. § 35-11-428(a)(iii)(F); Chapter 11.

6. Corrective Action Plan for MIT Failure and Repair and Abandonment of Wells:

   W.S. § 35-11-406(b)(iv) and (ix); W.S. § 35-11-428(a)(iii)(A) and (F); Chapter 11.

K. Wastewater production and disposal, Chapter 11

1. Type
2. Disposal locations and capacity

L. Pond Inspections, Monitoring, Leak Detection and control, Chapter 11

M. Surface spills and leaks – potential and proposed actions,Chapter 11

N. Other Wastes and Disposal Chapter 3, Section 2(c)(v); Chapter 11, URP Chapter 4 Section 9(j)

1. Other liquid wastes
2. Solid Wastes
3. Disposal
4. Airborne Particulates

O. Subsidence, Chapter 11

P. Wildlife Monitoring and Mitigation: W.S. § 35-11-406(b)(xiii), W.S. § 35-11-428(a)(i) and (a)(iii)(F); Chapter 11; Governor's Executive Order No. 2011-5.

Q. Drill Holes, W.S. § 35-11- 404

R. Confidential Information, W.S. § 35-11- 1101(a); Chapter 11.

S. Operations, Chapter 4 Section 9(j)

T. Radiological Environmental Effects, URP Chapter 4 Section 9(vi)

U. Effects of Accidents, URP Chapter 4 Section 9(xi)

V. Summary and Table of Required Reporting: W.S. § 35-11-428(a)(iii)(F), W.S. § 35-11-430(b), Chapter 11.

VII. Restoration/Reclamation Plan

A. General Restoration/Reclamation Schedule: W.S. § 35-11-406(b)(xix), W.S. § 35-11-428(a)(iii)(B), (E), (G) and (H), Chapter 11.

1. Reclamation schedule
2. List of proposed wellfields:

   Chapter 11.
3. Map of restoration sequence:

   Chapter 11.
4. Proposed time schedule:

   Chapter 11.

B. Groundwater Restoration, W.S. § 35-11-428(a)(iii)(H); Chapter 11.

1. Introduction
2. Statement of BPT
3. Target Restoration Values
4. Methodologies/process description and chemistry
5. Monitoring network during restoration

   Chapter 11
6. Restoration volumes and flow rates
7. Capacity of water/wastewater systems:

   Chapter 11.
8. Stability plan
9. Documentation of best practicable technology (post-restoration)
10. Demonstration of restoration

    W.S. § 35-11-406(b)(xix); W.S. § 35-11-428(a)(iii)(B), (E), (G) and (H); Chapter 11.

C. Decontamination and Decommissioning Plan W.S. § 35-11-406(b)(xix); W.S. § 35-11-428(a)(iii)(F); Chapter 11.

1. Disposal of Buildings and facilities.

W.S. § 35-11-406(b)(iv) and (xix), W.S. §35-11-428(a)(iii)(G) and (H); Chapter 11.

2. Disposal of toxic materials
3. Pond decommissioning:

   W.S. § 35-11-406(b)(iv) and (ix) and (xi); W.S. § 35-11-428(a)(iii)(G) and (H); Chapter 11

4. Wellfield decommissioning:

   W.S. § 35-11-406(b)(iv) and (xix), W.S. § 35-11-428(a)(iii)(G), W.S. § 35-11-406(b)(iv) and (xix), xiii), Chapter 11.

5. Soil decontamination:

   W.S. § 35-11-406(b)(ix),(xiii) and (xix), W.S. § 35-11-406(b)(iv) and (xix), G), Chapter 11.

6. Reclaiming Disturbed Lands

   URP Chapter 4 Section 17(d), W.S. § 35-11-2004(a)

7. Removal and Disposal of Structures, Waste Materials, and Equipment

   URP Chapter 4 Section 17(d), W.S. § 35-11-2004(a)

8. Conducting Post-Reclamation and Decommissioning Radiological Surveys

   URP Chapter 4 Section 17(g)(ii), W.S. § 35-11-2004(a)

D. Surface Reclamation: W.S. § 35-11-406(b)(i),(viii)(ix), (xv) and (xix), W.S. § 35-11-428(a)(iii)(G), Chapter 11.

1. Postmining land use:

   W.S. § 35-11-406(b)(i), (ii), (iv), (viii) (ix), (xiii), (xiv) and (xix), W.S. § 35-11-428(a)(iii)(A) and (G), Chapter 11.

2. Process facilities and road reclamation:

   W.S. § 35-11-406(b)(i), (ii), (iv), (viii),W.S. § 35-11-428(a)(iii)(G), Chapter 11.

3. Deep disposal well surface facilities

   Chapter 11

4. Contouring and final topography including drainage restoration

   W.S. § 35-11-406(b)(ii), (xiv) and (xv); W.S. § 35-11-428(a)(iii)(G), Chapter 11.

5. Wildlife habitat

   Chapter 11

6. Surface preparation

   Chapter 11

7. Topsoil application, estimated volumes and replacement depths:

   W.S. § 35-11-406(b)(viii), W.S. § 35-11-428(a)(iii)((G), Chapter 11.

8. Revegetation practices:

   W.S. § 35-11-406(b)(xv), W.S.§35-11-428(a)(iii)(G), Chapter 11.

   a. Seed mixtures:

      W.S. § 35-11-428(a)(iii)(G), Chapter 11.

   b. Reseeding methods:

      W.S.§35-11-428(a)(iii)(G), Chapter 11.

   c. Special areas

      Chapter 11

   d. Protection of newly seeded areas:

      W.S.§35-11-428(a)(iii)(G), Chapter 11.

9. Erosion control practices during and after reclamation

   W.S. § 35-11- 406(b)(ii), (viii), (xiii) – (xv); W.S.§35-11-428(a)(iii) (E) and (G), Chapter 11.

10. Weed control

    Chapter 3, Section 2(d)(ix)

11. Evaluation of surface reclamation success:

    Chapter 11.

12. Postreclamation and postmining environmental monitoring

    Chapter 11

E. Restoration/Reclamation Cost Estimate: W.S. § 35-11-428(a)(iii)(J), Chapter 11.

1. Cost of Removing Buildings:

   W.S. § 35-11-428(a)(iii)(J), Chapter 11.

2. Costs of topsoiling and reseeding:

   W.S. § 35-11-428(a)(iii)(J), Chapter 11.

3. Costs of groundwater restoration:

   W.S. § 35-11-428(a)(iii)(J), Chapter 11

4. Cost of capping, plugging and sealing of all wells:

   W.S. § 35-11-428(a)(iii)(J), Chapter 11.

5. Costs of personnel:

   W.S. § 35-11-428(a)(iii)(J), Chapter 11.

VIII. Cost Benefit Analysis

URP Chapter 4 Section 9(b)(x)

IX. Mine Wellfield Package

A. Wellfield Data Package: W.S. § 35-11-428(a)(iii), Chapter 11.

1. Aquifer test/communication perimeter monitor wells

   W.S. § 35-11-428(a)(iii), Chapter 11.
2. Potentiometric Maps

   W.S. § 35-11-428(a)(iii), Chapter 11.
3. Water quality. Upper and lower aquifers and ACLs

   W.S. § 35-11-428(a)(iii), Chapter 11.
4. Monitor well maps and construction details

   W.S. § 35-11-428(a)(iii), Chapter 11.
5. Avg. Production unit baseline water quality

   W.S. § 35-11-428(a)(iii), Chapter 11.
6. Proposed Target Restoration Values

   W.S. § 35-11-428(a)(iii), Chapter 11
7. Map showing area impacted by mining

Reference Document 11: Review Procedures and Acceptance Criteria

URP Chapter 4 Section 9(i), Section 15(a),

Attachment VIII: State Decision Document (SDD) Format

A State Decision Document (SDD) is required by LQD Rules and Regulations Chapter 11 . As stated in this rule, an SDD serves as a summary of, or reference to, all terms and conditions within an approved in situ mining permit application. The document is compiled by the LQD permit coordinator and signed by the Administrator. It provides a summary and documentation of all UIC-related terms and conditions, compliance provisions, and monitoring requirements included in the permit. It is a requirement that each section of the SDD includes a reference or references to specific discussions, tables, figures, or maps of the permit. Each section should begin with an affirmative statement that the application contains the required material and the material has been found to be satisfactory. If the reviewer cannot make the affirmative statement, then a special condition may be necessary.

If special conditions are proposed to be attached to the approval of the permit they should be discussed in detail (why a condition is necessary, what information or action is required, time or deadlines involved, and wording of the condition) in the appropriate section of the SDD. All special conditions will be consolidated at the end of the SDD and added to the Form 1-UIC.

A draft SDD will be sent to the applicant along with the notice to proceed to final public notice. The applicant will have an opportunity to respond the special conditions before permit approval. Note that this response is limited to correcting any errors in the condition or directing the division to the appropriate location in the permit of the required information. The applicant **CANNOT** revise any material in the application once public notice has been initiated. Ideally, the fact that a special condition is proposed to be attached to the permit should not come as a surprise to the applicant since the condition should be based on unresolved review comments.

III. Description of the Operation

A. General Information

This section gives a general location of the permit area along with the total number of acres to be permitted and the acreage that will be disturbed. Other information includes the number of wellfields, satellite plants, disposal wells, and any other significant feature of the permit.
This section can also include a brief history of the site as it relates to past exploration or mining activities

B. Confidential Information

Include a discussion if any confidential information has been accepted as part of the application. Only list the topic but not details of the information.

II. Adjudication

A. General

This section is devoted to the information required in the adjudication section of the permit. There should be specific mention of the necessary forms such as Form 1-UIC, and Form 3. Other important items include Surface and Mineral Ownership and Surface Owner Consent. The SDD should identify the location of the information whether in the adjudication file or the specific volume of the permit document.

B. **Reclamation** Performance Bond

There should be specific discussion of the reclamation performance bond as it is the guarantee to the state that money to remediate environmental impacts to the lands and waters of the state will be. The type and amount of bond should be documented. In most cases this information may not be available until during the public notice process when the applicant finalizes the bond instrument. Some operations may have several bond instruments and if so, each should be addressed separately. Who is the payee on the bond should be noted. Some bonds may be payable to both the state and the federal government.

III. Baseline Information

A. Pre-mine Land Use

The volume and section in the permit containing a discussion of the premine land use should be noted. There should be a short discussion of the major premine use(s) and a reference to a map or figure in the permit where the land uses are shown.

B. Cultural Resources

Important aspects of the Cultural Resources section are consultation and concurrence from the State Historic Preservation Office (SHPO), and if applicable, the federal land managing agency. The location of letters granting concurrence should be identified. There should also be a summary of the number of sites found and those recommended eligible for listing on the National Register. It is also important to discuss any required mitigation or actions required to avoid any sites.

C. Climate

This section only requires a brief reference to where the meteorology section is located in the permit. Any unique items such as what meteorology station is being used for the permit should also be mentioned.

D. Soils

Important discussion items include location of the soil descriptions, soil maps and the average soil salvage depths.

E. Vegetation

Besides the reference to the location in the permit, the major plant communities should be noted along with any prohibited and restricted noxious or designated weeds. The degree of infestation should be noted especially if a species such as cheatgrass comprises a significant portion of the permit area.

F. Wildlife

Documentation of consultation with the Wyoming Game and Fish Department and the U.S. Fish and Wildlife Service must be noted along with a reference to the location of their letters of concurrence is required. The location of the survey in the permit must be given. Special mention of any threatened, endangered, proposed, candidate, or petitioned species or the lack of should be made. The discussion should state whether or not any designated critical or crucial habitats occur in the area. Also important are any mitigation requirements either during or after mining are required.

G. Wetlands

This section should document that a wetlands survey was conducted and was deemed adequate. The number of acres of wetlands within the permit area should be stated along with how many acres fall within the proposed affected areas. The documentation must include consultation with the U.S. Army Corps of Engineers and their letter designating the wetlands and any required mitigation. If mitigation is required, the SDD discussion should reference where in the permit the mitigation plans are found and that the proposed plans were deemed adequate.

H. Radiological Description

This includes a brief statement that the required surveys were completed, that the surveys were adequate and where the reference to the survey is located within the permit.

I. Surface Water Hydrology

Besides identifying the location of this material in the permit, this section should include a summary of significant streams and waterbodies located within and near the permit boundary. The discussion should mention if any waterbodies will be physically disturbed or otherwise impacted by the mining operations including watersources for drilling and any water rights issues.

J. Hydrogeology

1. Description of the Mineral Zone

   A summary of the mineralogy described in the permit should be given along with average grades of the various mining zones.

2. Groundwater Hydrology

This section must include a summary of the aquifers in the area, including overlying and underlying aquifers and confining units and a description of the ore zone(s). It should also note if any of the ore zone sands are absent in parts of the permit area. Similarly, the discussion should include if any of the confining units thin or disappear across the permit area.

3. Aquifer to Be Mined

   This section should more fully describe the following topics:

   a. Subsurface Depth

   b. Aquifer Thickness

   c. Confining Formations

   d. Groundwater Classification

      The WDEQ/WQD will classify the groundwater in the production zone near the end of the permitting process. This section should include that classification action and reference the letter or memorandum from WQD which classifies the aquifer(s) within the permit area.

   e. Proposed Aquifer Exemption Boundary

      The permit is required to include what aquifers or sections of aquifers are requested to be exempted along with a map showing the area. This section of the SDD summarizes this information along with the justification given for the exemption and where it may be found in the permit.

4. Abandoned Wells and Drill Holes

   The SDD should note where in the permit document the applicant has included the following:

   a. the locations of these wells and holes

   b. what steps the applicant has taken or will take to verify they were properly abandoned.

IV. Mine Operations Plan

A. Geochemistry

This section should state the type of lixiviant to be used and the resultant chemical reactions to be expected. The SDD should describe how the lixiviant has been used successfully in the past. W.S. § 35-11-429 includes required language that applies to this section and an affirmative statement is required as to its presence.

B. Mining Schedule

The SDD should summarize the schedule and reference where it is contained in the permit. The discussion should include the different phases of wellfield development and mining and construction of satellite plants (if applicable).

C. Topsoil Handling and Protection

In addition to the topsoil salvaging and stockpiling commitments, the SDD should particularly note the special topsoil protection actions proposed by the operator during wellfield development. Of particular interest is whether there is a typical cross section or drawing that shows how topsoil will be protected during this process. A map showing the areas of long-term topsoil salvage and stockpile locations must be referenced.

D. Monitoring and Reporting Programs of Ore Zone and Aquifers That May Be Affected

This section should summarize the different monitoring commitments including the reporting requirements. Of particular interest is the location of a table that summarizes all the various monitoring activities and their reporting requirements.

E. Excursions

The discussion regarding excursions should be more detailed than other sections because of their importance and possible consequences. Items to be addressed and referenced include: list of parameters, sampling frequency, actions to be taken if UCLs are exceeded, reporting frequency, possible corrective actions, and scenarios of uncontrolled or unrecovered excursions. W.S. § 35-11-429 includes required language that applies to this section and an affirmative statement is required as to its presence.

F. Waste Water Handling and Disposal

Besides the method of disposal, the capacity of the disposal systems should be compared to the quantities of expected liquid waste generated. The liquid waste balance during mining, during mining and restoration, and during restoration should be discussed. If deep disposal wells are proposed, details such as the receiving formation, depth, and separation from other aquifers should also be discussed and referenced.

V. Reclamation Plan

A. Restoration and Reclamation Schedule

This should also include descriptions of the groundwater restoration methods and documentation of their success either at the proposed location through an R&D site or at other in situ operations with similar hydrogeology and using similar mining methods. Groundwater restoration and surface decontamination and reclamation schedules should be referenced.

B. Restoration Standards

The restoration standards are set during the wellfield package review process but a discussion of how they will be established should be included in the application. The SDD should reference where this discussion is found in the permit. W.S. § 35-11-429 includes required language that applies to this section and an affirmative statement is required as to its presence.

C. Reclamation of Structures and Facilities

Items to be covered in this section include: well plugging and abandonment, wellfield surface disturbances, utility lines, pipelines, building demolition, gamma surveys, and final reclamation. The discussion should also include where at NRC agreement state or NRC-licensed disposal facilities the operator will dispose of equipment that cannot be decontaminated.

D. Bond Estimate

This section should reference where the details of the bond estimate are located. It should also include a discussion of the major assumptions on which the estimate is based. The reviewer may also compare the estimate to other in situ bond estimates to ensure all items are covered and the costs are comparable.

VI. Public Notice

This section will document that the public notice requirements have been met. It will consist of two parts.

A. The first will state when the public notice for completeness was satisfied. It will state what days and in which newspaper it was published.

B. The second part will be similar except it will also note when the applicant was contacted to begin public notice and that notice was initiated within 15 days. The documentation will also confirm that within 5 days of the first public notice, that all surface owners of record of the land within the permit area, to all surface owners of record of land adjacent to the permit boundary and to any surface owners within ½ mile of the proposed mining site. The documentation will also show that within 5 days of the first notice that a copy of the application mine operations plan map was mailed to the Wyoming Oil and Gas Conservation Commission. This section will show that the applicant included a proof of notice and sworn statement of mailing which will be attached to and become part of the application (File-One-Of).

VII. **Specific Permit Requirements of In Situ Operations**

W.S. § 35-11-429 contains language that is required to be contained in every in situ application. While some sections of the SDD refer to this language, this section of the SDD consolidates and addresses all of the required content. For each of the statements, below the SDD will state where in the permit it is found.

A. Verbal notice to the administrator of excursions as soon as practicable after the excursion is confirmed, followed by reasonable notice.

B. Authorize the administrator to terminate or modify the mining operation if an excursion cannot be controlled or mitigated within the constraints of the permit.

C. Authorize the council upon the recommendation of the director to modify water-quality criteria used for groundwater restoration when information made available after issuance of the permit warrants a modification.

D. Prohibit any significant change in mining technique, method of operation, recovery fluid used, mining and reclamation plans or other activities that would jeopardize reclamation or protection of any waters of the state unless a permit revision has been approved by the director.

Chapter 11 also lists specific conditions that are to be incorporated into the permit either expressly or by reference. This section should state where in the permit each of the conditions is located.

Special Conditions

As mentioned in the introduction, there are instances where some permit issues were not resolved during the review process. Some issues may be resolved by placing a special condition to the approval of the permit. The wording of each special condition is presented and discussed in this section. This includes what section of the permit is being conditioned, background or history of the issue, what information or change is required, and any special time frames for resolution, which may include a schedule for interim steps. Some special conditions are for the life of the permit while others have to be corrected or resolved before the operator may conduct certain activities.

Signed this _____day of _____, 2012

_____

Administrator, Land Quality Division

Attachment IX: In Situ Annual Report Format

DEPARTMENT OF ENVIRONMENTAL QUALITY

LAND QUALITY DIVISION

IN SITU ANNUAL REPORT FORMAT (ISARF)

GENERAL PURPOSE STATEMENT FOR THE IN SITU ANNUAL REPORT FORMAT (ISARF)

This In Situ Annual Report Format (ISARF) and content outlined below are required by the Land Quality Division (LQD) Administrator under provisions of the Wyoming Environmental Quality Act (ACT) WS §35-11-411 and the LQD NonCoal Rules and Regulations (LQD NC R&R) Chapter 11. This document applies to permitted in situ mines.

PURPOSES:

1. Document fulfillment of commitments and conditions in the permit and any previous Annual Reports.
2. Evaluate bond adequacy and set the bond amount for the upcoming report period.
3. Document deviations from the permit during the current report period.
4. Evaluate conformance of monitoring data to permit commitments and LQD, NC R&R.
5. Identify issues arising from the information provided, and discuss any required actions.

The LQD will review In Situ Annual Report (ISAR) and make the following determinations:

1. Compliance with the permit commitments and conditions.
2. Reclamation bond amount required for the upcoming report period.
3. Conformance of monitoring information to permit commitments and LQD NC R&R, results support permit projections, identification of issues arising from the information provided, **and** any required actions.
4. Whether operator's responses to comments have been deemed acceptable.

   The operator shall be required to address any comments or deficiencies in the ISAR as identified by the LQD. Acceptance of the ISAR shall be documented by a letter to the operator, followed by an Administrator's letter setting the new reclamation bond amount.

   The operator shall complete and submit the Title/Certification Page (see page 5) and tables (listed in Section C ,see page 4) as presented and use the numbering and headings for each required item in the annual report in the order presented in this ISARF. Operators should not restate the text of the ISARF in their annual report. An objective of this ISARF is to have consistent formats among in situ reports from all operators. Consistent formatting will reduce the time involved in locating and evaluating information.

   Two (2) paper copies and two (2) electronic copy of the ISAR are to be submitted to the LQD District Office on or within thirty (30) days before the permit anniversary date. The District Office shall forward a copy to the Administrator. One (1) additional electronic copy shall be submitted to the Federal Land Management agency (Bureau of Land

Management (BLM) or the U.S. Forest Service (USFS)), if applicable. Upon acceptance of the ISAR by LQD, two (2) final electronic copies shall be provided by the operator and, if applicable, one (1) additional final electronic copy to the federal land managing agency (BLM or USFS).

Signed this _____day of _____, 2013

_____

Deputy Director, Department of Environmental Quality

Administrator, Land Quality Division

SUBMITTAL FORMAT REQUIREMENTS

A. General

1. The ISAR shall be contained within one or more 3-ring binders. Each binder shall be labeled on the cover and on the spine with the operator's name, permit number, facility name and reporting period.

2. Each binder shall have a table of contents listing the sections/headings outlined below, all attachments, maps, tables, etc.

3. Every page of the ISAR shall be numbered with a unique page number.

4. Every map shall have a unique title and number attached within the 3-ring binder or contained within a map sleeve.

5. Maps shall be formatted as outlined below.

6. Any revised materials submitted at a later date in response to LQD review comments shall have a revision date on each page.

B. Content and Format for Maps

Each map must be provided in the format specified below (the operator may reference permit maps if such maps are current):

1. The base for all ISAR maps must be a current clear and legible contour map or a current aerial photograph. The contour base should correspond to or be based upon an existing permit map at the same scale as the permit map. The preferred scales for maps and aerial photographs are: 1”=200’, 1”=400’ and 1" = 500'. The map scale should be consistent from year to year and map to map. The preferred contour interval is ten (10) feet. Use of different scales and contour intervals may be approved on a case-by-case basis by the LQD District Supervisor.

2. Individual map sheets should be of a reasonable size and generally should not exceed forty-eight (48) inches.

3. Each map must have a complete title block, including:

    a. Complete map title.
    b. Operator and facility name and address.
    c. Permit number.
    d. Annual Report period.
    e. Scale.
    f. North arrow.
    g. Contour interval.
    h. Date of map or date and source of photography.

4. Each map must have a complete legend, including:

    a. Clearly labeled legal subdivisions of section, township and range. Northings and eastings and/or state plane coordinates are generally useful and acceptable when provided in addition to the legal subdivisions.
    b. Notation of the permit area boundary.
    c. Notation of all structures not identified directly on the map.

C. Submittal of Electronic Data

In addition to the two (2) electronic copies of the ISAR that is required, LQD requests certain information be submitted in electronic format to aid in review and tracking of activities. Most forms of current electronic media will be accepted, though please contact the LQD if uncertain. The following Uranium Mining Data Submission Spreadsheets are available on LQD’s website:

http://deq.state.wy.us/lqd/Uranium_Data.htm

- Uranium Well Details
- Uranium Field Water Quality Data
- Uranium Groundwater Level Data
- Uranium Lab Water Quality Data
- Uranium Surface Water Flow Data
- Uranium Surface Water Station Details

REQUIRED ISAR CONTENTS

IV. Title/Certification

The ISAR shall be signed by a responsible corporate officer or duly authorized representative (see LQD R&R Chapter 11 Section 2(g)). Any responsible corporate officer or duly authorized representative signing the ISAR shall make the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for known violations.

II. Mine Operations

Identify any revised schedule or timetable of mining operations and estimate the numbers of acres to be affected during the next one (1) year reporting period. As required in §35-11-412 (iii).

A. Operating Wellfields

1. A map and well completion details table depicting the identification and location of all operating wellfields. Maps and tables can be submitted electronically.

2. A map and well completion details table depicting the location of all wells including deep disposal wells installed in conjunction with the mining activity. Maps and tables can be submitted electronically.

B. Water Balance/Hydrology

Include the Following:

1. The total quantity of recovery fluid injected and total quantity of recovery fluid extracted during the reporting period for each wellfield area, including a description of how these quantities were determined;

2. An updated potentiometric surface map(s) for all aquifer(s) that are or may be affected by the mining operation may be requested at the Administrator's discretion.

3. Summarize the handling of the wastewater stream.

C. Spills

1. A summary of all reportable spills during the reporting period, including dates of occurrence, location, quantity, quality, extent of affected area shown on a map with GPS points, and causes.

D. Excursions

1. Summarize all wells on or off excursion during the report period and include any existing excursion mitigation costs in the bond as a line item.

E. Mechanical Integrity Testing Results for Existing Wells

1. Annual summary i.e. total number of: wells, passed, failed, abandoned, replaced

F. New Affected Lands during the Reporting Period

1. List the depth and volume of topsoil and subsoil salvaged and stockpiled. Show all stockpiles both short term and long term on a map. Include the topsoil pile identification number, and protection measures employed and show the location on a map.
2. List the volume of subsoil removed and stockpiled. Include the location, subsoil stockpile identification number, and protection measures employed.
3. Describe new buildings constructed, location, purpose, and square footage.

4. Describe new ponds constructed including location, purpose, size, capacity, disturbance acreage.
5. New roads and utilities such as pipelines and power lines shown on a map and total acres disturbed indicated.
6. Other.

G. New Wells/Wellfields Installed During the Reporting Period.

A brief discussion of all new wells and wellfields installed during the reporting period. All new wells and wellfields should be located on the annual report map.

H. Report any stimulation activities for Class III wells

Identify well ID, type of stimulation and date.

I. Environmental Monitoring

Summarize and interpret monitoring results for the reporting period for th**e** following items.

- Groundwater
- Surface Water
- Wildlife (Include monitoring as required by the Wyoming Game & Fish Department or the U.S. Fish and Wildlife Service)
- Other

Specifically, discuss any significant trends or anomalies. Include graphs, charts, and time plots to visually substantiate the summaries and interpretation. Along with hard copies submit all water-quality and -quantity data electronically

J. Deviations or Unanticipated Events or Conditions

1. Individually list and describe all deviations from the approved Mine Plan (do not include approved incidental boundary revisions (IBR) or non-significant revisions (NSRs) which were approved during the report period. These include but are not limited to the quantity of minerals removed, the number of acres affected, and groundwater or waste water produced.

2. List all unanticipated events or conditions and remedial actions taken during the report period. These could include the discovery of significant archaeological or paleontological importance, unanticipated subsidence, or faulting.

K. Projected Operations

1. Discuss the projected mining operations and disturbances for the coming year. Specifically, identify any new wells or wellfield packages that will be submitted for approval or installation.

2. Provide the general location, number of holes, diameter, and average depth of drill holes to be drilled in the next reporting period.

III. Reclamation/Restoration Activities

Identify any revised schedule or timetable of reclamation/restoration activities and estimate the numbers of acres to be affected during the next one (1) year reporting period. As required in §35-11-412 (iii)

A. Groundwater Restoration Activities

1. Describe the progress of all restoration activities, including: identification of restored wellfields, identification of wellfields with restoration in progress, and wellfields where restoration is planned for the next reporting period.

B. Well Plugging and Abandonment Reports

1. Report the total number of any wells abandoned during the report period. At a minimum this report must include the well name, well spatial location, the depth and plugging technique. (Note: If all of the data mentioned above has been provided in the operator's quarterly monitoring reports then this data should be summarized in the Annual Report and reference made to those quarterly monitoring reports.)

2. Well abandonment reports shall be made available to the LQD. Well abandonment reports for SEO permitted wells shall be made available to the SEO per LQD Chapter 11, Section 15 (e).

C. Surface Reclamation Activities Past and Present

1. For each affected area where reclamation activities occurred, describe, including the number of acres, and locate on a map the affected areas that were:

    a. Contoured.

    b. Topsoiled and subsoiled (include the depth and amount of cubic yards used). A tabulation of soil stockpiles that documents new and depleted stockpile volumes should be maintained in the Annual Report.

    c. Seeded with temporary seed mix (include the seed mix, number of Pure Live Seed (pls) pounds used, and date seeded).

    d. Seeded with permanent seed mix (include the seed mix, number of pls pounds used, and date seeded for each area).

    e. Tabulate historic acres and newly disturbed areas and all reclamation completed during the report period.

D. Deviations or Unanticipated Events or Conditions

1. Individually list and describe all deviations from the approved Reclamation/Restoration Plan during the report period which were not approved as a revision or a non-significant revision. The operator does not need to include approved revisions or non-significant revisions (NSRs). These include but are not limited to the quantity of pore volumes removed, the number of acres reclaimed, and waste water produced.

IV. Drill Hole Reporting

All drilling activities occurring within the permit boundary will be covered by the mining permit and must be reported in the ISAR.

Information required to be reported in the ISAR for all drilling within the permit boundary is listed below. Drill hole reporting requirements are found in W.S. 35-11-404(d-e) and available from WDEQ-LQD website.
http://deq.state.wy.us/lqd/downloads/Forms/Abandoned_DrillSite_Report(9_2008).pdf

A. A USGS Quad or other contour map, of adequate detail depicting the following:

1. Outline of the general area of activity.
2. Location of any constructed access roads, temporary roads, and drill hole locations.

B. A tabulated listing of the drill holes

Use the Abandoned Drill Site Report Form.

C. Description of the nature and extent of disturbances, and a description of the reclamation of those locations indicated in (A) above.

D. Tabulation of the following:

1. Seed mixture used.
2. Method and date of seeding.
3. Location(s) where seed mixture was used.

V. Reclamation Performance Bond Estimate

A. Purpose Statement

The purpose of this section is to provide renewal reclamation performance bond calculations and to assess the adequacy of the current bond calculations and total dollar value. Applicable provisions of The Act include WS §35-11-417(c) (ii) and WS §35-11-411(a) (iii) and (d).

B. Most operators use a similar version of a spreadsheet that allows for efficient calculation of the bond estimate. It is recommended that the operator contact the LQD for sample formats successfully used by other operators to promote equality and consistency across the industry.

C. The bond estimate must be accompanied by a projected time schedule (Gantt chart) showing the completion schedule for each major reclamation operation/task.

D. The bond estimate must include an itemized accounting of all labor costs, including number and categories of personnel, salaries, and total hours required for the completion of the various reclamation tasks. A Gantt chart is suggested to display this information.

E. All assumptions and backup calculations must be included to support the bond estimate in an annually consistent format.

Reference Document 2: Adjudication

Table of Contents for Reference Document 2

The Adjudication File must contain the following information.

I. Forms and Information Submitted in Loose Form

A. Form 1-UIC: Application for Permit to Mine

One form must contain the original signature(s). If the entity is a corporation the seal must be legibly affixed; if the corporation does not have a seal "no seal" must be written. The applicant must initial and date the bottom of each page. Additional Form 1UICs may be copies. The applicant may submit two original Form 1-UIC if they desire to have an original signed form for their files rather than a copy.

The applicant must contact the Wyoming Secretary of State to determine if their entity structure must formally register to do business in Wyoming and the required entity name listing.

B. Form 3: License to Mine Application

One form must contain the original signatures and have a legible corporate seal. If the entity is a corporation the seal must be legibly affixed; if the corporation does not have a seal "no seal" must be written. The applicant must initial and date the bottom of each page. Additional Form 3s may be copies. A new Form 3 is not required for renewals or amendments.

C. Permit Fees

1. New permit applications or renewal applications require a minimum fee of $100.00 plus $10.00 for each acre within the permit area. The maximum fee is $2,000.00.
2. Permit amendment applications require a fee of $200.00 plus $10.00 for each acre within the amended area. The maximum fee is $2000.00.
3. Form 3. License to Mine: a $25.00 license filing fee is required.

D. Proof of Publication/Notice

This information will be submitted after the LQD notifies the applicant to commence public notice. It is the only information other than the reclamation bond instrument that may be added to the application once final public notice is initiated.

1. LQD will provide the publication notice format. Publication and notification is not to begin until written consent from the LQD has been received.
2. Proof of Notice will consist of the affidavit of publication executed by the newspaper.

3. Proof of Filing will consist of an affidavit of filing from the County Clerk just before the start of publication.

4. Proof of Notification shall be sent to all surface owners of record of the land within the permit area, surface owners of record of immediately adjacent lands, surface owners within ½ mile of the proposed mining site, and a copy of the mine operations plan map sent to the Wyoming Oil and Gas Conservation Commission. Such proof consists of a notarized "Affidavit of Notice," the format for which will be included with the Second (Final) Public Notice Format.

E. Reclamation Bond Instrument

1. Reclamation performance bond submitted in one or a combination of the following: original execution of a surety bond, cash, certified check, Federally Insured Automatically Renewable Certificate of Deposit or CDARS, Letter of Credit, Government Securities, self-bonding. For operations conducted on federal surface, the bond instrument must also be acceptable to the federal land managing agency which is often more restrictive. Contact the LQD for applicable rules and format. The performance bond may be submitted after the bond amount has been set by the District.

   a. Corporate Surety Bond

      This bond must be executed on the Division's required form. It must be an original execution and be accompanied by a Power of Attorney for the Surety's Attorney-in-Fact. It is wise to investigate with surety companies the time necessary to process a surety bond. The bond must be approved by the Attorney General's Office and the LQD prior to approval of the application.

   b. Federally Insured, Automatically Renewable Certificates of Deposit or CDARS.

      These must be made out solely to the Wyoming Department of Environmental Quality – Land Quality Division "Payee" unless federal lands are involved and the federal land managing agency (FMLA) requires the bond instrument be made to both the state and the FLMA. If the purchaser's name is listed "Nonpayee" must be cited. Interest and 1099s go to the benefit of the purchaser.

   c. Government Backed Securities (example: Treasury Bills, Money Markets)

   d. Self-Bond

      See Chapter 6 of the Land Quality NonCoal Rules and Regulations for details on this type of bond.

   e. Letters of Credit

      See Chapter 12 of the Land Quality NonCoal Rules and Regulations on details on this type of bond. The Wyoming Department of Environmental Quality - Land Quality Division forms must be used.

f. Cash - U.S. Dollars

If a personal or company check is submitted as cash bond, three weeks waiting is required to assure that the check will be paid by the bank. The application cannot be approved until the check has cleared the bank. To avoid any delay in approval, a certified or cashier's check should be used.

2. In the instance that a self-bond will be proposed as a performance bond, the self-bond application must be included with the initial (permit) application package.

3. For individual instructions on filing reclamation performance bonds contact the LQD Bonding Specialist.

F. Appendix C: Legal Land Description of Proposed Permit Area

1. Lands in the permit area are to be tabulated on LQD Forms C-1 and C-2 and signed by the applicant. The separate tabulations are as follows:

   a. Tabulation of all lands in the proposed permit (or amendment) area, including all transportation corridors and facilities, etc., by legal (¼¼) section, township, range, county, and municipal corporation, if any, (LQD Form C-1, one copy must contain an original signature) and number of acres for each entry listed.

   b. If a bearing and distance description is used, it must be presented in either quadrant bearings or azimuths with horizontal distances and “bearing and distance” or “metes and bounds” description (LQD Form C-2, one copy must contain an original signature). The number of acres in each bearing and distance description must be listed. A certified statement from a licensed surveyor stating the metes and bounds of the permit area close must be included.

   c. For lands where the applicant claims no right to mine, a tabulation by legal description, of all those lands within the permit (or amendment) area with the number of acres for each entry.

   d. List and map identifying the location of all lands in the permit area which also occur in other permit areas (i.e., dual permitted and/or license to mine areas), including the land use agreements (e.g., easements, encroachments, overstrip agreements, etc.) and all supporting legal documents.

2. An original U.S. Geological Survey topographic map, clearly outlining and identifying the lands within the proposed Permit or R&D License area. Photo copies or other similar copies are not acceptable unless prior approval is obtained from the LQD.

G. Surface Owner Consent, including:

1. Instrument of consent from the resident or agricultural owner, if different from the mineral estate owner, granting permission to enter and commence surface

mining, and also written approval of the applicant's mining and reclamation plans.

2. Instrument of consent from the surface landowner, if different from the owner of the mineral estate, including any lands privately owned but not covered by the provisions of W.S. §35-11-406(b)(xi), to the mining and reclamation plan.

3. Landowner Consent - If the applicant proposes to affect any land which lies within 300 feet of an existing occupied dwelling, home, public building, school, church, community or institutional building, park or cemetery, then written consent of said landowners must be obtained and placed in the permit application.

4. If BLM lands are present within the proposed permit area, the timing of granting consent could present complications as LQD does not consider an application complete until all consents are provided in the permit. However, BLM approval of the mining operation may come late in the Technical Review process. The LQD and BLM have cooperated to allow a mine application to be considered complete and proceed to Technical Review before final BLM approval has been granted.

    a. If federal minerals will be mined under surface administered by the BLM, "consent" is considered granted when BLM approves the 3809 plan of operation. Upon receipt of a 3809 plan of operations, the BLM Authorized Official (AO) may provide LQD with a statement that the operator has mining claims and he has received a plan of operations required by 43 CFR 3809. Final consent is not given until the operations plan is approved. LQD and BLM have agreed to use the BLM's acknowledgement of the applicant's right to file an operations plan as satisfaction of the LQD completeness criteria. Once the BLM approves the operations plan, the applicant will submit the approval or other documentation from the BLM to LQD as an addition to the permit. Close coordination is required between the applicant, BLM, and LQD to ensure the LQD permit application and the BLM plan of operations are similar and are approved relatively at the same time.

    b. On BLM managed lands where the mineral will not be mined but is adjacent to the mining area and whose surface will be used for stockpiles, roads, or other surface uses, may gain approval several different ways under Title 43 regulations. These include negotiating with the adjacent claim holder if applicable or file for a right-of-way for surface use.

    c. If BLM managed lands are proposed to be within the permit area but no mining or disturbance is to occur on those lands, consent from the BLM is required to show that BLM concurs with those lands to be within the permit area. The consent may take the form of some type of surface use agreement issued by the BLM.

    d. On split estate lands, if the operator has consent from the private surface owner to mine uranium, a 3809 plan of operations does not have to be filed with the BLM (see 43 CFR 3809.31(d)).

5. For lands managed by the State Land and Investment Board, an Instrument of Consent will be required from the board or its representative.

II. Appendices Submitted in Three-Ring Binders

A. Certification Page

The front of the first volume must have a certification page containing language required by LQD R&R Chapter 11signed by a "Responsible Corporate Officer" or a "Duly Authorized Representative." Attachment 1 to this reference document contains a sample certification page.

B. Appendix "A" (For lands within the permit area)

List of names, in alphabetical order, and last known addresses of:

Owners of record of the surface rights within Permit area.

Owners of record of the mineral rights within Permit area.

Maps showing locations of ownership in 1.a. and 1.b. above.

C. Appendix "B" (For lands adjacent [within one-half mile] to the permit area)

List of names, in alphabetical order, and last known addresses of:

Owners of record of surface rights of lands immediately adjacent to the proposed Permit,

Any other persons having a valid legal estate of record within one-half (1/2) mile of the Permit area such as water rights and rights-of-way owners, etc.

Maps showing the locations of the ownership in 1.a. and 1.b. above.

D. Appendix C (duplicate of what is filed in File-One-Of)

E. Appendix "E"

1. The permit application shall show the following information on a U.S.G.S. topographic map base, clearly outlining and identifying the lands to be within the proposed permit and amendment area:
   a. The permit and amendment area boundary (clearly identified).
   b. Lands to be affected over the life of the mine.
   c. A digital file containing the proposed permit boundary in .DWG or shapefile format.

2. In addition, Appendix E shall contain the following information on maps, based upon public records, at a scale between 1" = 400' to 1000', as well as the additional lists as specified:

    a. Location and names, where known, of all existing roads, railroads, public or private rights-of-way and easements, utility lines, pipelines, buildings, lakes, streams, creeks, springs and other surface water courses, oil wells, gas wells, and water wells.

    b. Drainage area within and surrounding the proposed permit area, including all surface water features.

    c. Location and listing of the ownership and use of all buildings on or adjacent to the proposed affected portions of the permit area.

    d. Probable limits of all previously disturbed or proposed disturbance by underground mining, and probable limits of all surface mining (active or inactive), on or adjacent to the land proposed to be affected.

    e. Map and list of the political boundaries of special districts such as water, police, fire, conservation; public and private parks; and cemeteries

    f. List of all known drill holes and monitor wells of 4 inches or less than diameter that have not been registered with the State Engineers Office.

F. Listing of Other Permits or Construction Approvals

Provide a listing of activities to be conducted by the applicant which require permits or construction approvals and the status of those permits or construction approvals under the following programs:

1. Hazardous Waste Management program under RCRA;
2. UIC program under the Safe Drinking Water Act (as it pertains to wells other than Class III wells);
3. WYPDES program under the Clean Water Act (CWA);
4. Prevention of Significant Deterioration (PSD) program under the Clean Air Act (CAA);
5. Nonattainment program under the CAA;
6. National Emission Standards for Hazardous Pollutants preconstruction approval under the CAA;
7. Dredge and fill permits under Section 404 of the CWA;
8. Existing Source Material License;
9. State Engineer permits;

A copy of the WQD/SEO approved pond design does not have to be included in the original license application but should be inserted later after WQD/SEO approval.

10. Documentation of county zoning compliance

    Written verification from the city or county (appropriate zoning or planning department) of approval for the mining operation (if affecting new lands) or that no zoning ordinances apply. (W.S. 35-11-406(m)(iii))

11. Other relevant environmental permits, including State permits.

    Copies of requested approved state and federal permits associated with this application (e.g. well permits, pond construction permits, discharge permits, fish and wildlife service permits) should be placed in the license application. It is not necessary to include the documentation associated with these permits, but simply build a table to illustrate the various approvals.

Reference Document 2
Attachment 1 Sample Certification Page

Certification

_____Mine,

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for known violations.

Signed this _____day of _____. 20___

_____ (Responsible Corporate Officer)___ ____(title)___
(or Duly Authorized Representative)

_____(printed name)_____

Reference Document 3: Hydrogeology

Table of Contents for Reference Documents 3

I. Introduction

The hydrogeologic material submitted must be certified by a Professional Geologist or qualified Professional Engineer registered in the state of Wyoming. The hydrogeology should be described using referenced and published information.

The information in D-5 has three levels of detail: (1) regional (macro scale extending approximately 15 miles beyond the permit boundary), (2) permit area (in a general manner describes the entire permit area and adjacent areas even those areas that will not be affected), and (3) the mine unit description (finer detail of the ore bodies to be mined and the potential impact area of the mining). Much of the finer detail will be submitted with the wellfield packages.

Much of the hydrogeology information should also be submitted electronically. Reference Document 1, Attachment V lists the data and provides a link to the location within LQD's website that contains the required spreadsheets.

II. Regional Setting

This section shall include, at a minimum, a discussion on the regional geologic setting, a generalized geologic map, and cross sections illustrating the regional hydrogeologic setting. An outline of potential discussion topics are provided below.

A. Regional Geology

1. General Geologic Setting
2. Regional Geologic Map and Cross Section(s)
3. Regional Hydrostratigraphy
4. Regional Structural Geology
5. Regional Surficial Geology

B. Regional Hydrogeology

1. Regional Potentiometric Surfaces
2. Regional Groundwater Recharge and Discharge
3. Regional Hydraulic Connection of Aquifers

C. Regional Water Quality

III. Permit Area Hydrogeology

This section shall include site-specific hydrogeology (geology and groundwater) information for the proposed permit area and adjacent areas such as hydrostratigraphic units, cross sections, structural geology, ore mineralogy, aquifer properties, well and drill hole information, and baseline water quality. An outline of discussion topics and further requirements are provided below.

A. Site Geology

1. Site Geology and Hydrostratigraphy
2. Isopach Maps
3. Cross Sections
4. Site Structural Geology
5. Ore and Rock Mineralogy and Geochemistry

B. Site Hydrogeology

6. Potentiometric Surface
7. Site Groundwater Recharge and Discharge
8. Site-Specific Groundwater and Surface Water Interactions
9. Lab tests illustrating the hydraulic properties of the Aquifer(s) and Aquitard(s).

C. Wells & Drill Holes within the Permit Boundary.

Include a commitment in the Mine Operations Plan to update the wells and drill hole information in the annual report and place a copy in Appendix D-5 of the permit.

D. Site Water Quality

See Reference Document 3

E. Site Geology

1. Site Geology and Hydrostratigraphy

   Hydrostratigraphy includes all geologic formations and units within the permit area and adjacent areas including aquifers and aquitards. For each hydrostratigraphic unit, the name, general description, depositional environment, extent, thickness, and continuity should be described. Hydrostratigraphic units should be identified and described using stratigraphic columns, lithologic and geophysical logs, geologic maps, and published data.

   a. Production Zone(s) and Overlying and Underlying Aquitards

Particular detail should be given to describing the production zone and aquitards above and below. This information is important to demonstrate that there is containment between the production zone and the overlying and underlying aquifers. Supporting documentation shall include a discussion of cores, well logs, stratigraphic cross sections, stratigraphic columns, hydraulic properties, etc.

2. Isopach Maps

An isopach (thickness) map should be generated for each production zone aquifer, overlying aquitard, overlying aquifer, underlying aquitard, and underlying aquifer. The average unit thickness and range should be described in the application.

Cross Sections

The hydrogeology in the Permit or License area and adjacent areas should be described using geologic cross sections and should be confirmed with geophysical logs and field investigation. The number of cross sections required to generally describe the permit area is very site specific. Generally, a minimum of one north/south and one east/west trending section for every square mile is recommended. However, the applicant is strongly advised to contact the LQD for the number of cross sections appropriate for the proposed permit area and adjacent areas before submittal. Whenever possible, include monitor wells as cross sections, when they are close to a cross section line. The information and the level of detail suggested for the cross sections are provided below.

a. Cross sections extending through the affected area should identify:

- Potentiometric surface(s);
- Monitoring wells projected onto the cross section line, their slotted or screened interval(s) and an indication of the water level;
- Lithologies;
- The production zone to be mined;
- Geologic features such as faults, paleochannels, etc.;
- Extent of mining (vertical and horizontal);
- Any historic underground mine workings;
- Aquifers and aquitards;
- Areas of aquifer communication;
- Hydrologic boundaries;
- Recharge and discharge areas; and

b. Consistent vertical and horizontal scales on all cross sections are advised.

c. Supporting information may include geophysical logs (resistivity, gamma ray, self-potential, density) and/or lithologic logs.

d. Legible electronic copies of drill hole logs for every hole and well used to develop the cross sections should be included in the application.

e. The minimum spacing between drill holes or wells used for developing the cross sections should be sufficient to justify the geologist's interpretation. Site conditions and availability of data will dictate the minimum spacing between drill holes or wells but at a minimum there should be one drill hole or well every 1,500 feet along the cross section.

f. The horizontal and vertical extent of the production zone is to be shown on the cross sections passing though proposed wellfields. This is accomplished by indicating general locations of roll front mineralization.

4. Site Structural Geology

a. Geologic Structures

Geologic features that could influence aquifer properties or serve as hydrologic boundaries such as faults, fractures, outcrops, and dip should be described.

b. Structural Contour Maps

A structural contour (elevation) map should be generated for each production zone aquifer, overlying aquitard, overlying aquifer, underlying aquitard, and underlying aquifer. The average elevation and depth and range should be described in the application.

5. Ore and Rock Mineralogy and Geochemistry

A geochemical, lithological, and mineralogical description of the production zone and any aquifers that may be affected by the injection of recovery fluid must be included in the permit application.

a. Core Analysis

As part of the geology, the geochemical characterization of the rock is to be included. Core samples or other physical samples should be analyzed and the results should be included in the permit.

b. Ore Zone Mineralogy

This section must contain a description of the mineralogy of the host rock in addition to the description of the ore. The average ore minerals, grade, should be described.

c. Ore Amenability to Solution Mining

This section should contain a brief summary or reference to the recovery solution to be used during mining. A discussion on geochemistry and the ability of the solution to dissolve the ore should be included.

F. Site Hydrogeology

1. Potentiometric Surface

   a. Water Level Data Collection – Baseline Monitoring

   Multiple water level elevation measurements should be obtained so that an accurate representation of water level elevations can be presented.

   Water level elevations should be measured quarterly for one year. Continuous monitoring should be considered where hydrographs are needed for assessment of groundwater recharge or discharge zones. Closed-in pressure readings may be necessary in gassy wells and flowing artesian wells.

   b. Potentiometric Surface Maps of All Affected Aquifers

      i. Potentiometric surfaces with sufficient data points to spatially define all potentially affected aquifers including all overlying and the vertically adjacent underlying aquifers and production zone aquifers must be submitted. Potentiometric surfaces should be extended into all units which are in good hydraulic communication with the aquifer, including clinker, alluvium, etc.

      ii. The premining potentiometric surface for these aquifers should be defined and located on a 1 inch = 1,000 foot scale map(s) which encompass the permit area and adjacent areas. This map should also show well locations, groundwater recharge and discharge areas, and other hydrogeologic features. Wells used in developing the potentiometric surface map should all be located and identified on the map with the particular water elevation and date of observation at each well shown. Legible electronic copies of logs of drill holes and wells used to develop the potentiometric surface maps are requested.

      iii. Hydrologic Boundaries

      iv. adequately stress the system to test aquifer properties;

2. Site Groundwater Recharge and Discharge

3. Site-Specific Groundwater and Surface Water Interactions

4. Hydraulic Properties of the aquifers.

   a. Hydraulic Properties of Affected Aquifers

   This section will present the hydraulic properties, aquifer characteristics and variability for the water saturated portions of the production zone and aquifers which may be affected by the mining process. Information to provide may include, but is not limited to, effective porosity, hydraulic gradient, velocity, storage coefficients or specific yields, transmissivity or hydraulic conductivity,

the direction(s) of preferred flow under hydraulic stress in the saturated zones of the production zone, and a discussion of how the values were derived.

b. Hydraulic Connection and Containment of Aquifers

The extent of hydraulic connection and containment between the production zone; overlying aquifers; underlying aquifers; and the hydraulic characteristics of any influencing boundaries in or near the proposed wellfield area(s) shall be determined and described.

c. Pump Tests

Any baseline aquifer pumping test should be designed to:

i. determine transmissivities, storage coefficients, hydrologic boundaries, leakage, aquifer homogeneity, and isotropy. For example, a multi-well pump test evaluation, as described by Theis (1935), Cooper and Jacob (1946), Boulton (1954), or as summarized by Lohman (1979) is suggested.

ii. Assess the hydro containment of any aquitards

iii. determine any hydrologic communication that may occur between the production zone and overlying and underlying aquifers;

iv. adequately stress the system to test aquifer properties;

v. determine the quantity of groundwater to be removed at various stages of mining;

vi. estimate the areal extent of static water level declines in potentially affected aquifers;

vii. evaluate potential impacts to adjacent water resources due to mining, and

viii. estimate groundwater conditions and aquifer characteristics likely to exist after reclamation.

ix. A minimum of one pump test in each aquifer to be mined is required. If faulting occurs within the production zone, multiple pump tests may be needed to characterize conditions within each fault block and across the fault.

x. Production zone, overlying and underlying. Monitor wells located in aquifers above and below the pumped aquifer should be placed in close proximity to the pumping well.

xi. An aquifer pump test plan or geohydrologic characterization plan should be discussed with the LQD during the early stages of the permitting process in order to facilitate LQD approval. A copy of the

aquifer pump test plan should also be included in the permit application.

xii. Generally, aquifer pump tests utilizing the Neuman-Witherspoon method (for leaky confined aquifers) of analysis or other method yielding equivalent information are recommended.

xiii. Identify both a chronological order of events and decisions that were made during testing.

xiv. The following information should be submitted for each aquifer or pump test:

a) All data obtained from the aquifer pump tests and measurements necessary to evaluate the pumping results; and

b) Methods of analyses:

- List the methods of analyses and equations used;
- List the assumptions upon which the equations are based;
- List how assumptions were met by the physical conditions; and
- Present sample calculation.

c) Graphs which show:

- All drawdown and recovery data;
- Curve or line fits;
- Match points, u [a dimensionless time parameter], W(u) [well function; exponential integral];
- Boundary and casing storage effects;
- Pump interruptions;
- Discharge adjustments; and
- t_o [time pumping began to when pumping ended].

d) Maps indicating the pumping well, monitoring wells, and associated maximum drawdown results for each test.

e) Correction factors and their associated supportive data and the method used for data adjustment strongly encourage to include barometric pressure

f) Results of analyses:

xv. If the pump test shows communication between aquifers that could be attributed to historic drill holes a reasonable attempt will be made to locate those holes and properly seal them. Additional aquifer testing may need to be performed to determine if the sealing had the desired effect.

G. Wells and Drill Holes within and Adjacent to the Permit

1. Wells

a. Well Location and Construction

Tabulate the appropriate information from Appendix E, including the names (or numbers), descriptions, and a map of all wells installed for water supply or monitoring and all wells which penetrate the production zone aquifer(s). The description shall include: names of present owners, well completion data, producing interval(s), aquifer, and variations in water level to the extent such information is available in the public records and from a reasonable inspection of the property. It may be necessary to conduct downhole inspections to determine well depth and completion intervals for wells within the permit boundary if such information is not available.

b. Site groundwater use

A brief summary of groundwater use in the area should include aquifers used and estimates of the amount of water (gpm) consumed for domestic, stock, or irrigation purposes. Impacts to groundwater levels or quality from local users or nearby operations that may affect the groundwater quality or quantity should be noted. For uranium or thorium recovery facilities, information on past, current, and anticipated future water use, including descriptions of local ground-water well locations, type of use, amounts used, and screened intervals shall be included.

c. Well completion reports

A summary table of all available well completion and well development details for monitor wells and other wells located within the permit boundary should be submitted. Consult the LQD to determine if it may be acceptable to submit this information in electronic format.

d. Groundwater Water Rights

Tabulate and either provide a map or reference another map in the application of all adjudicated and permitted groundwater rights. Locations and present owners of all wells inside and within 3 miles of the permit area should be included. Information concerning plugging and well completion and producing interval(s) (to the extent such information is available in the public record or by a reasonable inspection of the property) is also requested.

2. Historic Drill Holes and Abandoned Wells (Historic is any well or drill hole that was drilled or installed prior to the permit application being submitted. To the extent that records are available.)

   a. Provide a summary of historic exploration and development activities.

   b. Drill Hole and abandoned wells, Maps and Tables

      A list and map of all abandoned wells and drill holes, giving location, total depth, producing interval(s), type of use, condition of casing, plugging procedures, date of completion, and date of plugging for each well or drill hole within the permit area and on adjacent areas to the extent such information is available in public records and from a reasonable inspection of the property.

   c. Geophysical and Driller's Logs

      In addition to the logs supporting the cross sections mentioned above, legible electronic geophysical logs are also required for any monitor well, any well used in a pump test, or any well or drill hole used to gather data that is used to provide required information in the permit (e.g. to prepare., potentiometric surface maps). As a practice, LQD will accept a representative data set, based on LQD's choosing, with the rest available on the mine site.

   d. Verification of proper well abandonment

      To ensure proper abandonment procedures were used, plugging should be verified to the extent such information is available in public records and from a reasonable inspection of the property.

H. Site Water Quality

Groundwater quality must be defined for the license or permit area. Groundwater quality data must be collected for a sufficient length of time to identify any important spatial and time variant properties of all of the potentially affected aquifers, to show the premining hydrogeochemistry of the area, and to identify existing or anticipated impacts of adjacent mines on the groundwater quality within the license or permit area. Detailed information regarding the premining or baseline water quality sampling and analysis is provided in Reference Document 10, Premining Water Quality and Quantity Sampling, 11.

1. Monitoring network and parameters
2. Methods
3. A Summary of the Sampling Results (field and laboratory)
4. Statistical Analysis and Water Quality Relationships and Trends
5. Premining Groundwater Classifications

   In accordance with WQD RR Chapter 8, the WDEQ Groundwater Section will classify the groundwater in the producing horizon based on existing use and ambient quality of the groundwater. The operator shall reference the specific maps

and data in the Permit Application necessary for the WDEQ to complete groundwater classifications.

6. QA/QC procedures

IV. General Mine Unit Hydrogeology

Information on specific mine units or wellfield areas is to be submitted with each wellfield data package. This section may be omitted from the permit application document if the first wellfield data package is not being submitted simultaneously. Each wellfield data package shall be in a separate three-ring binder including the first wellfield if it is submitted with the initial permit application.

The main purpose of the wellfield data package is to increase the resolution of hydrogeologic information at the specific mine units. Reference Document 9, Wellfield Package, of this document contains specific information about the approach and requirements for the wellfield data package.

V. Seismology

This section is optional for operations not pertaining to uranium or thorium recovery, and the operator may include a discussion of regional and local seismology. The applicant may include this information in this section.

Items for analysis may include

- Seismic Hazard Review,
- Seismicity,
- Historic Seismicity Near Permit Area,
- Seismic Risk, and
- Probabilistic Seismic Hazard Analysis.

For uranium or thorium recovery operations, any information required in NUREG 1569 Section 2.6.1 Geology and Seismology, not addressed elsewhere in the application shall be required.

Reference Document 4: Upper Control Limit Calculation

Table of Contents for Reference Documents 4

I. Upper Control Limit (UCL) Parameters and Calculations

A. Selection of UCL Parameters for Uranium.

Excursions are detected through the use of systematic water-quality sampling at monitoring wells surrounding the active mining zone, both laterally and vertically. UCL parameters should be selected based on their reliability to detect an excursion event. At least three parameters are recommended to be included in each excursion monitoring program. Available data on R&D and commercial scale in situ mining operations indicate that certain parameters are typically good excursion indicators, while others are good only under certain geologic settings. The following parameters have been shown to be reliable excursion-detection parameters:

Parameters	**Units**
Conductivity	umhos/cm @ 25 C
Chloride	mg/L as Cl
Total Alkalinity	mg/L as CaCO3

Note: Total Alkalinity should not be used where the pH's are greater than 9.6 or less than 4.5.

Additional parameters that have demonstrated an ability to detect excursions are as follows:

Parameters	**Units**
Calcium	mg/L as Ca
Sodium	mg/L as Na
Sulfate	mg/L as SO4
Total Dissolved Solids	mg/L residue @ 180 C

B. Statistical Assumptions

Various statistical methods for analyzing water quality data bases are recommended. These methods may be sensitive to:

1. Significant departures from a normal distribution,
2. Serial dependence, and
3. Temporal trends.

A good review of this topic is found in Harris et al. (1987). In general, the skewness coefficient is a recommended test for normality; a sampling frequency no shorter than every two weeks is recommended to reduce serial dependence; and at least a two month sampling (4 samples per well) period is recommended to incorporate temporal variability into a water quality data base for UCL determination.

C. Screening the UCL Parameter Data Base for Errors and Outlier Populations

1. Data bases should be routinely screened through the use of (1) quality control (QC) checks and (2) checking and correcting any transcription errors. In addition to these data-screening steps, a baseline data base should be statistically evaluated for outliers.

2. Outliers are anomalously high or low values relative to the other values comprising a data base. An outlier can result from one or more of the following conditions:

   a. Transcription errors.

   b. Sampling errors.

   c. Analytical errors.

   d. Incorrect units of measurements.

   e. Natural water quality variability.

   f. Differences in geology within the sampled aquifer.

   g. Improper or incomplete well development

3. If the source of error responsible for an outlier is detected, then the anomalous value can possibly be corrected. However, there is often insufficient information available to evaluate an error source. The inclusion of an outlier in a data base can have a disproportionately large influence on statistical analyses of water quality data. Because there are no reliable methods for evaluating whether an outlier is due to an error or the result of natural water quality variability, a technique for discarding outliers from a data base is needed. The proposed screening technique accounts for wide variations in parameter values while still being capable of detecting outliers that fall outside of a statistically calculated interval. The following tolerance-limit formula (Loftis et al., 1987) is recommended for screening outliers from baseline data used to calculate UCL values:

   x = k S alpha = 0.05, p = 0.99

   where:

   x = mean of observations in sample
   k = tolerance limit factor
   S = standard deviation of sample

4. The tolerance limit factor (k) is a function of sample size (n), confidence level (1 - alpha), and proportionality values (p).

   Consider the following total alkalinity concentrations:

   Total Alkalinity, mg/L as $CaCO_3$

Well 37	100.8	93.6	97.0	87.4	86.3
Well 38	85.3	93.0	87.2	85.5	85.1
Well 39	98.0	92.5	92.0	87.8	85.7
Well 40	76.6	80.3	66.0	86.3	73.0
Well 41	91.5	91.0	92.2	85.1	87.4
Well 42	93.0	94.3	93.8	84.9	79.4
Well 43	94.5	93.5	105.0	84.7	86.3
Well 44	92.0	94.0	94.0	85.7	89.6
Well 45	85.7	88.1	89.5	81.3	95.0
Well 46	86.6	85.5	92.2	92.0	84.2
Well 47	91.3	93.2	93.2	84.7	85.1

Step 1. There are no hard and fast rules regarding the initial selection of potential outliers. A recommended method is to visually screen the data base for anomalous values or groups of values, then subjectively identify whether these values are especially high or low relative to the other values in the data base.

Initial Outlier Estimate: 105.0, 66.0

Step 2. Calculate the tolerance interval, excluding the use of the two potential outliers (i.e., 105.0 and 66.0). See table for "k" values. [Loftis et al., 1987]

x = 88.83
S.D. = 5.38
k(n = 53) = 3.094

x + k S
88.83 $\pm$ (3.094 x 5.38)
(72.2 to 105.5)

Step 3. An evaluation of the tolerance interval indicates that the value 105.0 is marginally acceptable and therefore should be included in the baseline data base for statistical calculations.

Step 4. Recalculate the tolerance interval including the value 105.0, but excluding the value 66.0.

x = 89.13
S.D. = 5.77
k(n=54) = 3.094

x $\pm$ k S
89.13 + (3.094 x 5.77)

(71.3 to 107.0)

At an alpha = 0.05 and p = 0.99, one can assert with a degree of confidence (1 - alpha) that the proportion of the population of possible alkalinity values contained between 71.3 and 107.0 mg/L as CaCO3 is at least 99 percent. The use of an alpha - 0.05 is based solely on the historical use of this alpha value for statistical evaluations of hydrology data, while the 99% proportionality value is used because it is the highest value for which k values are available.

Note: For a given sample size (n) of 100, only one value should be expected to be discarded as an outlier when it may actually be a representative value.

Step 5. At this point, the iterative process of calculating tolerance intervals for outlier detection is complete. The conclusion is that the value 66.0 is considered an outlier and will be discarded from the data base.

Note: If one or more wells have parameter values that contain a relatively large number of outliers then these wells should be treated separately as an additional baseline data base for one or more UCL parameters.

D. Calculation of UCL Values

1. Upper Control Limits are needed to detect the uncontrolled migration of production fluid outside of a wellfield in either a lateral or vertical direction. The use of UCLs for conservative parameters provides a reliable basis for determining when an excursion occurs.

2. The establishment of UCL values based on the variability of the baseline data base is recommended. The use of a baseline mean value plus three standard deviations for calculating NPDES standards was proposed by the National Academy of Science (1977) in a report to the EPA. Using parameter values that follow a normal distribution, the probability of a single observation falling beyond the boundary designated as X + 3 S.D. is 0.00135, or 0.135 percent..

   However, if different methods or laboratories are used to analyze collected water samples after the baseline data base has been established, then the calculated probability of exceeding UCL values may be less accurate.

3. The rationale used to evaluate the adequacy of various methods to calculate UCLs is based on two criteria:

   a. the UCL for any parameter should not be exceeded in the baseline data base after it has been screened for outliers, and

   b. the proper calculation of an UCL for any parameter should enable detection of an excursion event within one or two sample collections (based on a 2-week sampling interval). These criteria are based on minimizing the probability of

committing a Type I and Type II error. In general, the preferred method is one that results in the highest UCL value while still being capable of detecting an excursion event.

4. A method that uses the baseline mean plus 5 standard deviations is the recommended method for calculating UCLs. Use of this proposed method should result in adequate excursion control, yet minimize the possibility of incorrectly placing wells in excursion status.

5. For situations where chloride values are very low and show little variation during baseline data collection, the LQD is willing to consider allowing the upper control limit for chloride to be set at the average baseline value plus 15 mg/L if that value is greater than the average baseline value plus five standard deviations. This option will only be considered for chloride.

E. Trend Wells

The use of trend wells has enabled in situ operators to detect production fluid migration prior to the fluid reaching excursion monitoring wells. Parameter value changes in a trend well can signal a water balance problem in the active wellfield that may not be otherwise evident to the operator. These wells are typically located between the injection/production wells and the monitor wells in the active wellfield. Water-quality analyses of samples collected from trend wells will not result in regulatory corrective action. Their use is as a preventive measure to allow greater operational control of wellfield fluids and to decrease the possibility of having to halt production to restore a much more extensive plume of mine fluids had an excursion been detected at the excursion-monitoring wells.

II. Conclusions and Recommendations

The following is a list of recommendations relating to the use of baseline data for calculating UCLs.

A. UCL parameters should be selected based on their reliability to detect an excursion event. At least three parameters are recommended to be included in each excursion monitoring program.

B. For UCL determination, a sampling frequency of 4 samples taken at a minimum of 2 weeks apart is recommended.

C. For UCL determination, baseline data bases should be screened for outliers. A recommended method of outlier detection is discussed in this Reference Document.

D. A well (or wells) that produces anomalous water-quality data, for any UCL parameter, should be treated separately for UCL calculations.

E. The use of an empirically-derived method for calculating UCL values is proposed. The formula is: baseline mean plus 5 standard deviations, after the baseline data base has been screened for outliers.

F. The beneficial use of trend wells located between the active wellfield and the excursion monitoring wells is recommended. Trend well water quality data need not be submitted to the LQD.

G. A review of water-quality changes during an excursion event indicates that excursion status criteria could reliably be based on the exceeding of two out of three UCL parameters

H. It is recommended that the operator have a program that evaluates well data for trends and use action limits for any UCL parameter and place on "alert" status as possibly trending towards an excursion and consider pre-emptive actions to prevent an excursion.

Table 1A

Values of “k” for various sample sizes (Page 1 of 2)

	α = 0.95			α = 0.99		
n	0.90	0.95	0.99	0.90	0.95	0.99
2	32.019	37.674	48.430	160.193	188.491	242.300
3	8.380	9.916	12.861	18.930	22.401	29.055
4	5.369	6.370	8.299	9.398	11.150	14.527
5	4.275	5.079	6.634	6.612	7.855	10.260
6	3.712	4.414	5.775	5.337	6.345	8.301
7	3.369	4.007	5.248	4.613	5.488	7.187
8	3.136	3.732	4.891	4.147	4.936	6.468
9	2.967	3.532	4.631	3.822	4.550	5.966
10	2.839	3.379	4.433	3.582	4.265	5.594
11	2.737	3.259	4.277	3.397	4.045	5.308
12	2.655	3.162	4.150	3.250	3.870	5.079
13	2.587	3.081	4.044	3.130	3.727	4.893
14	2.529	3.012	3.955	3.029	3.608	4.737
15	2.480	2.954	3.878	2.945	3.507	4.605
16	2.437	2.903	3.812	2.872	3.421	4.492
17	2.400	2.858	3.754	2.808	3.345	4.393
18	2.366	2.819	3.702	2.753	3.279	4.307
19	2.337	2.784	3.656	2.703	3.221	4.230
20	2.310	2.752	3.615	2.659	3.168	4.161
25	2.208	2.631	3.457	2.494	2.972	3.904
30	2.140	2.549	3.350	2.385	2.841	3.733
35	2.090	2.490	3.272	2.306	2.748	3.611
40	2.052	2.445	3.213	2.247	2.677	3.518
45	2.021	2.408	3.165	2.200	2.621	3.444
50	1.996	2.379	3.126	2.162	2.576	3.385
55	1.976	2.354	3.094	2.130	2.538	3.335
60	1.958	2.333	3.066	2.103	2.506	3.293

Table 1A

Values of "k" for various sample sizes (Page 2 of 2)

	α = 0.95			α = 0.99		
65	1.943	2.315	3.042	2.080	2.478	3.257
70	1.929	2.299	3.021	2.060	2.454	3.225
75	1.917	2.285	3.002	2.042	2.433	3.197
80	1.907	2.272	2.986	2.026	2.414	3.173
85	1.897	2.261	2.971	2.012	2.397	3.150
90	1.889	2.251	2.958	1.999	2.382	3.130
95	1.881	2.241	2.945	1.987	2.368	3.112
100	1.874	2.233	2.934	1.977	2.355	3.096
150	1.825	2.175	2.859	1.905	2.270	2.983
200	1.798	2.143	2.816	1.865	2.222	2.921
250	1.780	2.121	2.788	1.839	2.191	2.880
300	1.767	2.106	2.767	1.820	2.169	2.850
400	1.749	2.084	2.739	1.794	2.138	2.809
500	1.737	2.070	2.721	1.777	2.117	2.783
600	1.729	2.060	2.707	1.764	2.102	2.763
700	1.722	2.052	2.697	1.755	2.091	2.748
800	1.717	2.046	2.688	1.747	2.082	2.736
900	1.712	2.040	2.682	1.741	2.075	2.726
1000	1.709	2.036	2.676	1.736	2.068	2.718

Source: **Miller, I., and J. E. Freund, 1977.** *Probability and Statistics for Engineers*, Second Edition, Prentice-Hall, Inc., NJ, p. 505.

Reference Document 5: Surface Water

Table of Contents for Reference Documents 5

I. Introduction

Baseline information is required due to the potential for surface disturbance to native watersheds and their associated drainage channels. Reference Document 1, General Information, Attachment V contains a list of the surface water data to be submitted electronically and a link to LQD's website for the required spreadsheet. .

II. Regional Surface Hydrology

Present a brief discussion of the regional surface water features in the area.

III. Local Surface Hydrology

For surface waters within the permit area and on adjacent lands include the following:

A. Watershed and Stream Channel Characterization

Names, descriptions, and a map of all such waters, including ephemeral drainages and permanent impoundments.

1. Watershed Network

   A drainage network map (scale 1 inch = 1000 feet) of the permit and adjacent areas on the topographic base map should be included in the application. The applicant should:

   a. Include all streams with defined channels (the extent of stream channels should be checked in the field and/or with aerial photography); a defined channel is generally distinguished by a "blue line" on a quadrangle map, yet judgment should be used to identify stream channels relative to the scale and type of map being used;

   b. Distinguish perennial, intermittent, and ephemeral streams. For uranium or thorium recovery facilities provide an assessment of typical seasonal ranges and averages as well as the historical extremes for levels of surface-water bodies and aquifers (per NUREG 1569, Section 2.7.1(5));

   c. Show boundaries of contributing watersheds;

   d. Locate stream gages; and

   e. Show playas, groundwater discharge areas, impoundments (stock ponds), springs and other hydrologic features (water wells, stock tanks, and windmills).

2. Watershed Delineation

   Provide a table identifying drainage area for all watersheds that will be affected by mining activities.

B. Water Quantity Measurements

Baseline information needs to be gathered in order to assess potential impacts from the proposed operation. Generally speaking, ISR operations do not physically disturb a stream channel to the point of requiring reconstruction. Most are not withdrawing water from the surface water system or using ponds as a means of sediment control, thus direct impacts to surface water quantity are not easily detectable. What is of concern is protection of operation facilities, be it actual facility buildings, header houses, or wells. A framework for establishing the event frequency should be based upon the expected life of the facility, such that design consequences can be identified.

C. Baseline Water Quality

Reference Document 10, Premining Water Quality and Quantity Sampling, includes information on developing the baseline sampling plan and reporting and analysis of results for the application, as well as baseline water quality constituent, quality control measures, and holding times.

D. Surface Water Rights

List and map all permitted surface water rights within and adjacent to (½-mile buffer) the permit area boundary. If water will be impounded on site as part of the sediment control program, the listing of water rights should be extended to three miles downstream of the permit area boundary. The listing is typically found in Appendix E and reference to the information location should be identified in Appendix D6.

The following information should be tabulated for each surface water right:

a. Source;

b. Permit number;

c. Location;

d. Facility name (reservoir, ditch);

e. Applicant name;

f. Acre-feet; and

g. Use (industrial, irrigation, stock, etc.).

E. Surface Water and Groundwater Interactions

Any surface water and groundwater interactions should be identified and discussed. Information should include the following:

1. The location, flow, water quality, and aquifer source of springs and seeps.

2. General relationship of streams to alluvial groundwater systems, including influences on water quality.

F. Potential for Erosion and Flood Damage to In Situ Recovery Facilities

An assessment of the potential for erosion or flooding that may require special design features or mitigation measures to be implemented shall be included. If applicable, the proximity of surface water features to in situ recovery facilities, including wellfields, should be discussed.

G. Erosion Control Measures

Drilling activities at long-term in situ mine operations have shown a critical need for erosion and sediment control to protect native soils/vegetation as well and to prevent additional contributions of sediment to streamflow or to runoff outside the affected land.

1. LQD requests ISL operations include within the permit, text discussion which details the Best Management Practices for erosion and sediment control including the following:

   a. Description and drawings of typical Erosion Control Measures (ECM) to be employed on the mine site. This should include generic design information such as rock size for check dams, installation specifications, etc. The description should also include the usual conditions under which each measure will be used.

   b. A maintenance and inspection plan including inspection frequencies for each type of ECM.

   c. A detailed map of all ECMs in the Annual Report

   Erosion control and soil protection are essential. The Water Quality Division, WYPDES Storm Water Program requires a Storm Water Pollution Prevention Plan (SWPPP). Applicants are required to obtain a Stormwater Discharge Permit from DEQ / Water Quality Division. As part of this process a Storm Water Pollution Prevention Plan (SWPPP) must be prepared, which contains the detail of each erosional control measures. The applicant should provide LQD with a summarized version of this information provided in the SWPPP, which lists the typical options of best management practices that the applicant may employ at various locations across the permit area. A map showing the specific and exact location of each potential best management practice is not necessary, as this information is continually updated and available in the SWPPP. However, the longer-term erosional control measures should be maintained and updated on a map as part of the Annual Report, for inspection and surety calculation purposes.

2. Temporary Diversions

Minimum standards require that temporary diversion channels be designed for the 2-yr, 6-hr event or a duration that yields a higher peak flow. However, it is recommended that the design event recurrence interval be chosen based on the structure's expected lifetime and an appropriate probability of failure for the function of the diversion. Recommended design event return periods are:

Life of the Diversion	Storm Event Return Period
<3 years	10 - year
3 – 10 years	25 - year
11 – 20 years	50 - year
>20 years	100 - year

Hydrology and hydraulic calculations should be submitted with each diversion design, and designs of diversion structures should consider

3. Culverts

Culverts must be designed to pass the predicted peak flow from the 10-year storm event (at a minimum) without static head at the entrance. The minimum cover over the culvert must be sufficient to prevent collapse of the culvert; however, one foot or one-half the culvert diameter of cover is typically recommended. Culverts must be a minimum of 18 inches in a diameter for ease of maintenance. Erosion control measures for the inlet and outlet as well as a maintenance plan should be specified.

Reference Document 6: Topsoil and Subsoil Management, Erosion Control, and Temporary Seeding/ Stabilization

Table of Contents for Reference Document 6

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(cont.)

This Reference Document intends to assist all interested parties in the management of soils at In Situ Leaching Operations (ISL). It briefly addresses the baseline requirements but the major focus is on management and protection of the topsoil resource during construction and mining operations.

Permittees may propose alternative methods to achieve the basic performance standards embodied in the Wyoming Environmental Quality Act and the LQD NonCoal Rules and Regulations, Chapter 11, "In Situ Mining". However, the procedures provided in this Reference Document are those recommended by the LQD. If any permittee proposes alternative handling procedures, the LQD staff and permittee must agree that alternative procedures are acceptable before using the procedures in the field or before approval of any permitting actions.

I. Applicable NonCoal Rules and Regulations

The following list of NonCoal Rules and Regulations should be reviewed for handling of soils at all in situ mining operations.

Environmental Protection Performance Standards

Chapter 3, Section 2(c)(i); Topsoil
Chapter 3, Section 2(c)(ii); Subsoil

In Situ Mining

Chapter 11; A soil survey ...
Chapter 11; A description of the nature and depth of the topsoil...
Chapter 11; The procedure(s) used to protect the topsoil...
Chapter 11; Procedures for insuring that all acid-forming, or toxic materials...
Chapter 11; Procedures for ground surface preparation, depth of topsoil replacement.

II. Baseline Characterization of the Soil Resource

Generally, all soils within the permit areas at ISL operations should be surveyed at an Order 3 level using methods of the Natural Resource Conservation Service (NRCS). This level of soil survey should be completed before the permit application is submitted. Please refer to Guideline No.1, "Soils and Overburden" for more information on soil baseline characterization.

III. Best Management Practices

1. The Administrator may authorize topsoil to remain on areas where minor disturbance will occur associated with construction and installation activities including but not limited to light-use roads, signs, wellfields, utility lines, fences, monitoring stations, and drilling provided that the minor disturbance will not destroy the protective vegetative cover, increase erosion, nor adversely affect the soil resource. The objective of topsoil and subsoil management plans at In Situ Leaching (ISL) operations is to minimize disturbance

and impacts to the soils and premine vegetation resource, thereby allowing the postmining land use conditions to be established.

2. The purpose of erosion/sedimentation control is to protect native vegetation and topsoil from contamination and prevent receiving waters from being impacted. The application should include a brief discussion of the erosion/ sedimentation control measures. A copy of the WQD Storm Water Pollution Prevention Permit and Plan(s) should be available for review onsite.

   These objectives are accomplished by but not limited to the following:

   a. Limiting areas of disturbance during each wellfield delineation, construction, and operation. The LQD policy of not salvaging topsoil from the entire wellfield is based largely on the concept of having significant areas of native vegetation and topsoil undisturbed in the wellfield.

   b. Limiting the disturbance and reestablishing the land use is accomplished by minimizing temporary access roads, and segregating topsoil and subsoil during mud pit, pipeline, wellfield construction and other excavations. It is important that the operators protect vegetation, topsoil, and subsoil by reducing traffic routes and promptly replacing the soil where necessary to minimize the impact of mining, protect the soil resource, and help the recovery of vital vegetation.

   c. Minimize disturbance below the surface, preserve soil structure, and to facilitate the reestablishment of native vegetation. The operator must thoroughly plan access and pipeline routes to maintain the greatest area of undisturbed topsoil and vegetation.

   d. Avoid mixing of overburden material with native or salvaged topsoil.

   e. Minimize the spilling or splashing of drilling fluids, cuttings, or cement on areas outside the mud pit.

   f. Establish well designed and properly constructed erosion control practices.

   g. Complete temporary or final seeding of the topsoil resource as soon as practicable.

3. Topsoil and subsoil are generally not stripped and stockpiled for the entire wellfield area. However, soil stripping in specific wellfield areas where traffic is concentrated (e.g., wellfield pattern area as defined below) may be necessary in site specific situations. The physical and biological characteristics should be considered in all decisions to strip the soil resource. These characteristics should be considered when evaluating the potential for soil erosion or soil contamination.

4. For all areas that will have soil stripped or displaced, salvageable soil depths should be confirmed in the field by qualified personnel before initiation of any disturbance. This confirmation may be accomplished by conducting an Order 1-2 soil survey or by digging verification holes on 3 acre grid spacing across the disturbance area. The Order 1-2 soil survey is a standard level of soil characterization used to assess mining impacts. The

information gathered from the more detailed delineation of soil depth should be submitted in the permit application for known wellfields. For new wellfields, this information shall be submitted as a part of the wellfield approval package, before wellfield development.

5. A major concern of LQD is the proper protection of the topsoil resource during wellfield installation. The number of drill holes, wells, and the amount of traffic results in a great potential for topsoil compaction, contamination, and loss. A detailed discussion of the operator's BMPs for topsoil handling during wellfield installation and other areas should be included in the mine operations plan section of the application. The information provided in this Reference Document should be considered when developing the BMPs.

6. The Mine Operations Plan should include BMPs that describe soil protection for the following areas:

   a. Facility areas – both permanent or long-term and temporary areas

   b. Roads – include all categories of roads

   c. Topsoil stockpiles, including

      i. Location

      ii. Design details such as slope, volume, toe ditches or berms

      iii. Temporary seeding including seed mix, quantity and seeding methods

   d. Well installation, including drill pad and mud pits, including

      i. a typical cross section and plan view of the area of a well installation (these will show the temporary stockpiling or grading areas of topsoil and subsoil); and

      ii. typical location of the mud pit relating to the drill rig, stockpiles, etc.; measures taken to keep contaminants off the native or stockpiled topsoil (the typical depth of the mud pit and if overburden will be removed, how it will be handled to prevent mixing with the topsoil and subsoil)

   e. Pipeline installation: Include information similar to well installation section above.

   f. Erosion control methods

      i. Description and drawings of typical erosion control measures to be employed on the mine site. This should include generic design information such as rock size for check dams, installation specifications, etc. The description should also include the usual conditions under which each measure will be used.

      ii. A maintenance and inspection plan including inspection frequencies for each type of erosion control measure

      iii. A detailed map of all erosion control measures in the Annual Report

   g. Designated travel corridors, colocation of pipelines and utilities, etc.

h. Access during wellfield development

i. Wellfield operations

IV. Access During Delineation Drilling Activities

A. Minimize the number of Temporary Wellfield Access Roads.

Strategically locating roads such that they offer the most direct route between operations will result in minimizing these roads. Road placement should avoid drainages, wet or low areas, and take advantage of desirable surface conditions (i.e., ridge line, sandy soils, etc.).

B. Minimize the extent of Temporary Wellfield Access Roads.

Vehicles should stay within designated travel ways of minimal width. Soils are not generally salvaged from these Temporary Wellfield Access Roads.

C. Minimize disturbance to Vegetation

Vehicle tracks within the wellfield area are unavoidable. However, the operator should limit the disturbance to the vegetation within the wellfield. Patches of undisturbed vegetation on this area will enhance the reestablishment of vegetation both during the producing stages and for final reclamation. Non-essential activities should be reduced or suspended during adverse weather conditions. For example, reduction of activities should occur during very wet periods when soils are saturated and travel is difficult. This recommendation may assist in limiting deep rutting of native areas inside and outside the Wellfield Pattern Area.

D. Minimize vehicular activity during wellfield construction.

Minimize vehicular activity during wellfield construction outside the areas that will undergo wellfield development (i.e., outside of Wellfield Pattern Areas). The wellfield area between the wellfield pattern area and the ring of monitoring wells should have limited designated travel routes during the installation process. Multiple two-tracks crisscrossing the undisturbed vegetation outside the wellfield pattern area is detrimental to the vegetation and soil. The LQD recommends planned access to desired areas of the wellfield pattern area.

V. Soil (Topsoil and Subsoil) Protection at Facilities Areas and Operational Roads

Most soils in Wyoming have a limited depth of topsoil. The amount of soil that should be stripped from facilities and roads, as discussed below, should be evaluated on a site specific basis as allowed by Chapter 3, Section 2 (c)(ii)(A) and (B).

A. Permanent or Long-Term Facilities.

Soils should be salvaged from permanent or long-term facilities areas, associated pad (parking) areas, and long-term storage areas. Salvaged soils should be stored in long-term stockpiles.

B. Temporary Structures and Storage Areas.

Temporary structures used for short- term construction activity or storage (less than six months) are generally not stripped of soils. However, topsoil and perhaps subsoil should be stripped where it is likely that the soil will be adversely affected by compaction due to repetitive traffic or contaminated by fuel, oil, grease, drilling mud or other such construction materials. The LQD should be consulted when these materials are planned for storage. The conditions, characteristics, duration, and types of items to be stored should be considered before a decision is made to strip the soil from these storage areas.

C. Primary Access Roads.

All suitable soil should be salvaged from the Primary Access Roads that service the permanent/long-term facilities. Salvaged soil is stored in long-term stockpiles.

D. Secondary Access Roads.

7. Soil should be salvaged from the Secondary Access Roads that service the wellfields and headerhouses. The depth of soil stripped should be site specific as determined by the soil horizons, texture, and other factors that will effect erosion or road stability. These soils are stockpiled in long-term stockpiles.

8. Secondary access roads are constructed progressively as headerhouses are located and wellfield installation proceeds. These roads usually include a gravel surface. During reclamation, an effort should be made to remove the gravel before ripping, in preparation of soil replacement. Furthermore, gravel road surfaces containing aggregate of greater than 1.5 inches should be removed before preparing for soil replacement. Any remaining gravel should be ripped and disced into the road base before final soil application.

E. Monitoring Well Access Roads.

The soils are generally not salvaged from these roads. These designated travel ways are typically two-track trails that are located such that the number and length of roads are minimized. Sensitive areas such as springs and wetlands are avoided. Travel should typically be limited to light-duty vehicle use.

F. Long-term soil stockpiles

Long-term soil stockpiles are constructed and designed in accordance with Chapter 3, Section 2 (c)(i)(B) of the LQD NonCoal Rules and Regulations. These stockpiles should have containment berms or ring ditches to conserve the resource and are seeded as soon as possible with a temporary seed mix to protect the pile from wind and water erosion. These piles also require a topsoil sign with letters at least 6 inches high to be located on the pile or close proximity of their base. Erosion from stockpiles may be controlled by:

1. Utilizing a flat construction profile.
2. Locating stockpiles away from drainage ways.
3. Using contour plowing, seeding, and mulch on stockpiles.
4. Establishing an approved vegetative cover as soon as possible.
5. For large stockpiles, grading contour ditch outlets to stabilized outlets and drainage ways.
6. For large stockpiles, grading toe ditches to zero grade with less than 0.5 acre-foot capacity.

VI. Well Installation, Delineation Drilling and Mud Pits

A. Protection of Undisturbed Topsoil and Vegetation.

Of particular concern is the protection of undisturbed topsoil and vegetation during wellfield installation. The number of drill holes, wells, and the amount of traffic results in a great potential for topsoil compaction, contamination, and loss.

B. Mud Pit Construction.

Mud pit constructions are constructed to minimize disturbance to the topsoil and subsoil resource. This construction is accomplished by limiting the size of these excavations, segregating suitable soils to the extent practicable and reapplying the material in the reverse order after activities are completed.

C. Placement of soil during Well Construction and delineation drilling.

During mud pit construction, soil is removed from the excavation and placed in a temporary stockpile. The soil may be placed on native topsoil. There are times when the depth of the mud pit exceeds the salvage depth of the soil resource. The depth of the well relative to the depth of soil, and specific site conditions, should be considered when determining where the underlying material should be stockpiled. The soil stockpile should be located such that it is not mixed with the pile of deeper earthen material and placed to ensure that it is protected from contamination. Compaction by

vehicular traffic should be avoided after stockpiling is completed. Flagging or other physical means should be used to alert operators to avoid the temporary soil stockpiles. Upon completion of wellfield development activities (well installation, pipeline and electrical installation), this stockpiled soil is replaced. Seeding should be accomplished at the earliest appropriate season, either fall or early spring.

D. Minimize Contamination from Drilling Fluids.

Care should be taken during delineation drilling, pilot hole drilling, and well installation to minimize the spilling and/or splashing of drilling fluids, cuttings, or cement on areas outside the mud pit.

E. Backfilling Mud Pits.

When mud pits are backfilled, soils are replaced in the reverse order they were removed. Parent material or subsoil last removed are replaced first. Soils is placed on the surface of the pit.

F. Soil Conservation during Wellfield Installation.

The applicant must present a detailed plan for preventing topsoil compaction, contamination and loss during the wellfield installation and drilling activities. This will include

1. A discussion of the above activities and the steps that will be taken to prevent topsoil loss, compaction, and contamination.
2. A typical cross section and plan view of the area of a well installation. These will show the temporary stockpiling or grading of topsoil and subsoil.
3. The typical location of the mud pit and measures taken to keep contaminants off the native or stockpiled topsoil. The typical depth of the mud pit and, if earthen material below the soil will be removed, how it will be handled to prevent mixing with the topsoil and subsoil.

VII. Pipeline Installation

A. Soil Conservation During pipeline Installation and Removal

The applicant must present a detailed plan for preventing topsoil compaction, contamination and loss during pipeline installation activities. This will include

1. A discussion of the activities discussed below and the steps that will be taken to prevent topsoil loss, compaction, and contamination.
2. A typical cross-section and plan view of the area of a pipeline installation. These will show the temporary stockpiling, windrowing, or grading of topsoil and subsoil.

3. The measures taken to keep contaminants off the native or stockpiled topsoil. The typical depth of the trench and, if earthen material below the soil will be removed, how it will be handled to prevent mixing with the topsoil and subsoil.

B. Minimizing Disturbance to the Soil Resource.

Pipelines should be constructed to minimize disturbance to the topsoil and subsoil resource. This construction should be accomplished by limiting, the size (width) of the pipeline trench, segregating topsoil/subsoil and reapplying this soil after activities are completed. It is not recommended that high pressure pipelines be collocated with wellfield pipelines.

C. Soil Handling

During pipeline trench construction, suitable soils should be removed from the trench and temporarily stockpiled or windrowed along the trench. The soil material may be placed on native topsoil. It is very likely the depth of the trench will exceed the salvage depth of the soil resource. The deeper earthen material is piled separately from soil, to the extent practicable.

D. Soil Replacement.

When pipeline trenches are backfilled, soils are replaced in the reverse order they were removed. Parent material (deeper earthen material or in some situations C horizon subsoils) are replaced first, with topsoil/subsoil being placed on the surface of the excavation. If topsoil is segregated from the subsoil, then topsoil is replaced over the surface of the subsoil. Seeding should be accomplished at the earliest appropriate season, either late fall or early spring.

VIII. Wellfield Operations

A. Wellfield Access during Operations.

During operation, routine access in wellfields should be limited to Secondary Access Roads and Monitoring Well Access Roads. Traffic off these roads should be restricted to necessary well maintenance, field work and ancillary activities.

B. Access During Day-to-Day and Adverse Weather.

Access to each wellhead is a necessary part of the day-to-day operations of an ISL facility. Traffic should be limited to the established designated wellfield access and well access roads to reach all pattern wells. During adverse weather, particularly wet ground conditions, activities in vegetated areas of wellfields should be limited when rutting and impact of the soil structure will occur. If rutting occurs, the ruts should be raked out and seeded as soon as conditions will allow.

IX. Temporary Stabilization/Seeding and Erosion Control of Disturbed Areas

To avoid the loss of the soil resource during exploration, delineation, development, production, and monitoring phases, it is important that ISL operators practice appropriate measures to limit wind and water erosion. Timely revegetation of affected areas assists in protecting the topsoil/subsoil resource from erosion. Erosion control is essential. Aggressive revegetation efforts should be initiated following completion of any construction activities. Any areas where the topsoil/subsoil or vegetation is stripped should be reseeded before the next growing season. Where vegetation is affected by vehicular traffic, the need for reseeding must be evaluated on a site-by-site basis.

The following practices should be considered:

A. Vegetation Reestablishment

The primary means of erosion control at ISL operations is to minimize impact to native vegetation and swiftly reestablish vegetation on disturbed areas. Revegetation is accomplished in two ways:

1. In wellfield areas, quick reestablishment should be accomplished by minimizing the impact to the native vegetation, so vegetation can be reestablished from existing plants and root stock the following growing season;
2. In those areas where the native vegetation is impacted, seeding with an approved temporary seed mix, at the earliest appropriate season either late fall or early spring, is recommended.

B. Seeding and Seedbed Preparation

The affected areas within ISL wellfields, temporary wellfield access roads, drill sites, backfilled pipeline corridors, and any ancillary disturbances, should all be seeded at the earliest appropriate season. All reclaimed roads should be ripped or disced before seeding. Seedbed preparation and seeding operations should be conducted on the contour or perpendicular to the prevailing wind direction on flat or level ground. Traffic is restricted on areas that have been reseeded.

C. Drainage Bottoms

Drainage bottoms require special consideration. Drainage bottoms should be avoided in all phases of operation, where practicable. Erosion control measures are essential to protect all drainages. Erosion control measures are dependent on the following: how much disturbance will occur, expected flows, channel geometry and gradient, soil type, and associated conditions. A fast growing cover crop, mulching, erosion netting, or straw bales should be considered to minimize soil erosion and promote revegetation. Care should be taken to obtain weed-free protective materials.

D. Long-Term Topsoil/Subsoil Stockpiles

Long-term topsoil/subsoil stockpiles are constructed to conserve the salvaged soil. This stockpiling is accomplished by constructing the pile with gentle side slopes, which permits seeding with mechanical equipment, promotes revegetation, and reduces potential erosion. A ditch and/or berm may be constructed around stockpiles to assist in maintaining the soil in the pile, and assist in demarking its location. Topsoil and subsoil stockpiles should be seeded at the earliest appropriate season, either late fall or early spring. Long-term soils stockpiles should entail fencing, if potential damage from livestock is a concern.

E. Erosion and Runoff Control

Primary Access Roads and Secondary Access Roads should be designed and constructed to assure adequate drainage to protect the road surface, base, and surrounding undisturbed areas using best available engineering practices such as energy dissipaters, adequate ditches, and culverts. Turnouts, water bars, or erosion control structures should be used in ditches, where appropriate, to minimize the velocity of runoff and reduce potential ditch erosion.

Notice

All existing water wells completed in the production zone which "…***currently serve as a source of water for Class I, II, III, Special (A) or Class IVA uses as described in Chapter 8 of the Water Quality Rules and Regulations…"*** **{ref: LQD** Non-Coal Chapter 11, Section 10 (i) (A**)}** should be plugged and abandoned prior to applying for aquifer reclassification and exemption (ref: **LQD** Non-Coal Chapter 11, Section 8).

Reference Document 7: Groundwater Reclassification to Class V (Mineral Commercial) and Aquifer Exemption Process

Table of Contents for Reference Document 7

Reference Document 7

Groundwater Reclassification to Class V (Mineral Commercial) and Aquifer Exemption Process

I. Introduction

The purpose of this guidance document is to provide guidance to operators of In Situ Uranium Recovery (ISR) facilities in order to submit the necessary data for the Wyoming Department of Environmental Quality (WDEQ), Water Quality Division (WQD) to perform a reclassification of a mineral commercial groundwater to Class V (Mineral Commercial). The groundwater reclassification is required to facilitate mining of the uranium ore zones in accordance with state and federal laws.

II. Permitting and Review Processes

Toward the end of the Technical Review process for the LQD permit application, the LQD will provide the information necessary in order for WQD, Groundwater Section to reclassify the groundwater(s) containing the production zones to Class V groundwater. This groundwater reclassification is required to obtain an aquifer exemption from the United States Environmental Protection Agency (EPA). The information being requested was extracted from the following documents:

1) Underground Injection Control Program: USEPA-Wyoming DEQ MOA, 1983 (MOA), and;

2) USEPA Memorandum, Guidance for Review and Approval of State Underground Injection Control (UIC) Programs and Revisions to Approved State Programs, GWPB Guidance #34, Attachment 3, Guidelines For Reviewing Aquifer Exemption Requests.

To facilitate this process, the applicant is requested to compile the information requested in Item III Sections A through F, and any associated figures, to support the groundwater reclassification and aquifer exemption process as part of the LQD permit application (i.e., Appendix D-12: Groundwater Reclassification and Aquifer Exemption). Ideally, Appendix D-12 should be a stand-alone Groundwater Reclassification and Aquifer Exemption volume. This Appendix D-12 volume should have its own Table of Contents and unique pagination. The maps and figures required for this appendix could be replicas of maps and figures that are provided in the permit application; however, these figures may have different titles and figure numbers in this appendix.

In many cases below, a reference to a map, figure or table in the permit application will be adequate to supply the necessary information. Therefore, the referenced application

materials shall be submitted electronically by a file format acceptable to DEQ. Please note that a hard copy of the map discussed in Item III, Section II.F is requested.
A total of four (4) copies of the Appendix D-12 volume should be provided by the applicant to LQD. When Appendix D-12 information is deemed "acceptable", LQD will provide WQD with two copies (one for the WQD District office and one to be submitted to EPA).

WQD will conduct a review of Appendix D-12 to ensure completeness and technical adequacy. WQD will submit a "statement of basis" to the EPA for the groundwater reclassification determination, which will include one copy of the Appendix D-12. WQD will request EPA's review and concurrence of the proposed groundwater reclassification as part of the EPA's aquifer exemption process. This request will be submitted to EPA when LQD determines the entire permit application to be technically adequate and directs the applicant to initiate final public notice. The final public notice will contain language informing the public about the request for an aquifer exemption.

As stated in the 1983 MOA, "within 45 days from EPA receipt of the information and findings, EPA will respond to WQD/LQD in writing. This response will be an interim response pending receipt and review by EPA of the results of the public participation process conducted by LQD/WQD. This interim response will become final if there are no comments related to the classification of the ground water during either the comment period or the public hearing, if held. If comments are received during the comment period or the public hearing the interim response will become final if not modified within 20 days of the receipt of all the comments by Region VIII.

III. Content and Format (Appendix D12: Groundwater Reclassification and Aquifer Exemption[s])

A. Geographic Extent of Proposed Aquifer Exemption

The applicant shall provide a hard copy map as discussed in Item F.1 below, along with an electronic copy of the proposed aquifer exemption area in an electronic format and file structure acceptable to DEQ.

B. Geologic Overview

The applicant should provide a brief general summary of the regional and site geology.

C. Evaluation Criteria (Ref: EPA Guidance 34, Attachment 3)

1. Name of formation of aquifer.
2. Subsurface depth or elevation of zone.
3. Vertical confinement from other underground sources of drinking water.
4. Thickness of proposed exempted aquifer.
5. Area of exemption (e.g., acres, square miles, etc.)

6. Water quality analysis of the horizon to be exempted.

7. Demonstration that the aquifer "…does not currently serve as a source of drinking water." (40 CFR 14.4 (a)).

   To demonstrate this, the applicant should survey the proposed exempted area to identify any water supply wells which tap the proposed exempted aquifer. The area to be surveyed should cover the exempted zone and a buffer zone outside the exempted area. The buffer zone should extend a minimum of a 1/4 mile from the boundary of the exempted area.

   If no water supply wells would be affected by the exemption, the request should state that a survey was conducted and no water supply wells are located which tap the aquifer to be exempted within the proposed area.

D. Mine Considerations–Amenability to Mining

Applicants for aquifer exemptions to allow new in-situ mining should demonstrate that the aquifer is expected to contain commercially producible quantities of mineral. Information to be provided may include a brief summary of logging which indicate that commercially producible quantities of mineral are present, a description of the mining method to be used, general information on the mineralogy and geochemistry of the mining zone, and a development timetable. (Ref: USEPA Guidance 34, Attachment 3, page 3.)

1. Description of Production Zone;
   a. Mineralogy
   b. Geochemistry
2. Process Description;
   a. Wellfield
   b. Groundwater Monitoring Plan
3. Timetable for Development.

E. Proposed Aquifer Exemption Boundary

The applicant should provide a brief general summary of the process used to calculate the proposed aquifer exemption boundary. Reference should be made to the addendum of the Appendix D-12 where further, detailed information can be found.

F. Addendums

1. Map: The applicant should supply a hard copy map(s) that clearly depicts the boundary of the proposed aquifer exemption area. The map should be of sufficient scale to clearly show the following items:

    a. proposed wellfield(s);
    b. perimeter monitoring wells;
    c. proposed aquifer exemption boundary;
    d. permit boundary;
    e. any drinking water supply wells within ¼ mile of the proposed aquifer exemption boundary or any drinking water supply well that may be effected by the mining operation.

2. Detailed calculations for the proposed aquifer exemption boundary.

3. Copy of WQD aquifer reclassification to Class V Mineral Commercial determination and the "statement of basis" document (as soon as available).

4. Copy of Notification for Public Participation (as soon as available).

5. Copy of USEPA aquifer exemption decision (as soon as available).

Reference Document 7: Attachment I Wyoming DEQ/WQD EPA Memorandum of Agreement Appendix A

IV. Introduction

A. Appendix A of the Memorandum of Agreement between the State of Wyoming DEQ/WQD and the EPA lists the following information requirements: (The EPA has accepted the Mine Operation Plan and Appendix D5 on a CD and the operator may submit this information in an electronic format attached to the Aquifer Exemption binder.)Definition of the permit area with a map

B. Application Appendix D-5

Description of regional and site specific hydrogeology, including the mineralized zone, a map and description of groundwater uses

C. Mine Operations Plan

1. Description of mineralized zone including extraction techniques
2. Process description including
   a. Wellfield
   b. Monitoring plan

D. Public Notice Documentation

As soon as available, affidavits of notice to the public and copies of comments related to the groundwater classification.

Reference Document 8: Well Installation/Completion

Table of Contents for Reference Document 8

I. Introduction

The applicant shall describe the different steps and procedures used to install and complete wells. Often the steps and procedures used for injection and production wells are the same and may be combined. Different procedures for monitor wells shall be explained. The topics to be addressed include but are not limited to the following:

A. Well Casing Diameter

The diameter of the well should be appropriate for the type of well being constructed. The annular space shall be large enough to allow a minimum sealing material thickness of 1½ inches between the outside casing diameter (excluding the casing joints) and the internal diameter (i.e., drill bit size) of the bore hole wall.

B. Well Construction Methods

Describe the steps and methods used to construct the wells. This would include the use of pilot holes, type of drill rig used, and use of drilling mud or other drilling fluids. Typical well completion schematics are also required within the permit application.

C. Casing

1. Suggested casing materials for wells include polyvinyl chloride (PVC), steel, HDPE, poly, or stainless steel. Galvanized steel and aluminum should not be used against lixiviant. The applicant needs to consider the depth of the well and the downhole pressures and temperatures when selecting the physical properties of the casing material. The use of screws anywhere on the casing material is not allowed. See also Chapter 11.
2. The applicant shall describe how the casing material will be joined and installed.
3. The description shall also describe the use of centralizers and their spacing. Casing shall be equipped with centralizers placed at a maximum spacing of one per 40 feet to ensure even thickness of annular seal.
4. The well opening must be covered and, for wells located in remote or unattended areas, it is recommended that the well head be closed with a locking cap.

D. Annular and Surface Seals

1. Describe the procedures and materials used to seal the annulus including the calculations used to determine the amount of cement or other sealing materials required to fill the void.

2. Acceptable materials used to create annular seals include neat cement slurry, sand-cement grout, or bentonite clay mixtures meeting the following requirements .

   a. Neat cement slurry shall be composed of Portland Cement and clean water in a proportion to yield a slurry weight of approximately 15 pounds per gallon.

   b. Sand-cement grout is a mixture of one sack of Portland Cement (94 pounds), sand, and clean water in a proportion of not more than one part by volume sand to one part by volume cement. No more than 6½ gallons of water per sack of Portland Cement (94 pounds) shall be used in the mixture.

   c. A bentonite clay slurry shall be composed of bentonite clay and clean water in a proportion to yield a slurry consisting of approximately 25% solids by weight of the slurry.

   d. The sealing material shall be thoroughly mixed before placement so there are no balls, clods, or other features that could reduce the effectiveness of the seal.

   e. Special quick-setting cement, retardants to setting, cement accelerators, retarders, fluid-loss additives, dispersants, extenders, loss-of-circulation materials and other additives, including hydrated lime to make the mix more fluid or bentonite to make the mix more fluid and reduce shrinkage, may be used, if approved by the Administrator.

   f. Used drilling mud or drill cuttings from the borehole shall not be used as sealing material.

   g. The minimum time that must be allowed for materials containing cement to "set" shall be in accordance with ASTM International (formerly American Society for Testing and Materials, ASTM C150-00 "Standard Specifications for Portland Cement" (2000)) or American Petroleum Institute (API) RP 10B "Recommended Practices for Testing Oil-Well Cements and Cement Additives" (22nd ed., 12/1997, with Addendums 1 (10/1999) and 2 (11/00). When necessary, these times may be reduced by use of accelerators as determined by the well contractor.

   h. Materials used in annular seals should not be emplaced by gravity or free fall methods, unless for the purposes of topping off to the surface.

   i. A seal should be placed at the surface of all wells, sufficient to prevent water movement down the annular space.

The Administrator may grant deviations from these guidelines, provided that the operator can supply documentation of reliability, mechanical integrity, design and construction to protect groundwaters of the state.

E. Screening and Packing

1. The applicant shall describe any under-reaming techniques, how the correct interval is verified, and screening methods.

F. Well Development and Stimulation Techniques

Before baseline water-quality samples are taken, wells must be developed to restore the natural hydraulic conductivity and geochemical equilibrium of the aquifer. The applicant should describe the procedures used to develop the wells such as air lifting, swabbing, pumping, or other accepted development and stimulation techniques. This section should also describe what monitoring (i.e., pH and electrical conductivity) is performed to ensure the development activities have been effective.

G. Mechanical Integrity Tests (MIT)

1. MITs are required to be conducted on all Class III wells. While MITs are not required for operational monitoring wells outside the production zone, it is recommended. The pressure in the sealed casing, using packers, should be increased to 120% of the anticipated maximum operating pressure; a monitor well should be tested based on operating pressures of the surrounding production area. A well should maintain 90% of this pressure for 10 minutes to pass the MIT test.
2. The permit is required to include a schedule and describe the method of MIT to meet the requirements of Chapter 11 of LQD R&R. Single-point resistance testing is not a method approved by the administrator.
3. The results of the MIT shall be reported quarterly to the LQD. Reference Document 1, General Information, Attachment V contains a link to a spreadsheet for reporting the details of test. The required information includes:
    a. Well identification
    b. Date of the MIT
    c. Method of testing and testing details such as the following
        i. Packer depth

ii. Initial pressure

iii. Final pressure

iv. Pressure loss

d. Casing type

e. Depth of casing

f. Results of test

g. Next test date

9. The report shall also include

a. Description of the method of plugging or repair of wells that failed the MIT

b. Result of the repair of plugging

c. Statement that the wells were plugged in accordance with the permit or prior approval was granted by the administrator for a different method.

II. Reporting Class III Well Completion Information

The following well completion information should be reported:

1. Field identification number and the Wyoming State Engineer's Office permit number if applicable.
2. Location, date drilled, and aquifer represented.
3. Ground elevation and elevation of the measuring point.
4. Drill bit and casing diameter.
5. Packer base depth and elevation.
6. Casing depth and total depth.
7. Slotted or screened intervals (depth and elevation).
8. Total hydraulic head elevation (i.e., closed-in formation pressure if well is gassy or flowing; otherwise, static water level).
9. Method of measuring formation pressure.
10. Casing material and physical properties.
11. Well development techniques.

III. Well Acceptance Procedures

Except for all new wells authorized by an area permit under subsections 2(e) of non coal Chapter 11, the operator may not commence injection in a new injection well until construction is complete and the operator has demonstrated mechanical integrity. The operator shall submit notice of completion of construction and demonstrated mechanical integrity in the quarterly monitoring reports.

A. Operator Tasks

To comply with this regulation, the following procedures will be followed. The operator will send a letter to the LQD District ~~III~~ Office enclosing the NOCC lists and requesting acceptance of completion, including

1. Two copies of hardcopy lists of wells for which certification is desired, signed by a company representative
2. Results of the MIT for all wells listed.
3. Two CD-ROMs with completed Excel-compatible spreadsheets containing well information and MIT results. An electronic copy of the spreadsheets may be obtained from the LQD website.

B. LQD Tasks

1. Wells found unsatisfactory must either be repaired or plugged and abandoned. Chapter 11 requires repair or plugging and abandonment within 120 days of wells which have failed an MIT. An inspection following after an inspection that had flagged one or more wells as unsatisfactory should inspect those wells to confirm that the wells have not been placed in service and if 120 days or more have passed, have been repaired, or plugged and abandoned. Information on these wells known to have been plugged and abandoned must be sent to the database office.

Reference Document 9: Wellfield Package

Table of Contents for Reference Document 9

I. Development Approach

The applicant should consider the following approach in preparation to the development of the wellfield package:

A. Increasing resolution of the geologic and groundwater models

B. Preparing the initial wellfield design. The design needs to consider the ability of the monitor well ring to adequately monitor the production zone.

C. Preparing a work plan for LQD review before conducting extensive field activities

D. Installing additional baseline monitor wells

E. Measuring hydraulic properties of the production zone and demonstrating the extent of hydraulic connection between the ore zone and perimeter monitoring wells

F. Confinement between the production zone and the deep monitor zone and shallow monitor zone aquifers. Also, demonstrating the hydraulic characteristics of any influencing boundaries in or near the wellfield.

G. Installing perimeter monitor wells

H. Providing Notices of Completion of Construction of construction for Class III wells.

I. Conducting wellfield pump tests

J. Providing groundwater model verification

K. Preparing and submitting the final wellfield package

II. Wellfield Package Contents

At a minimum, the wellfield package will contain the following:

A. Map(s)

A map(s) showing the area to be affected by mining depicting the proposed location of the injection wells, production wells, and locations of existing monitor wells.

Soil Salvage and Protection
The applicant must indicate on an appropriate mine operations map the areas which will have the topsoil salvaged and placed in a long term topsoil stockpile and those areas where mine operations will take place but the topsoil will not be salvaged. The information for this section must also include the depth and volume of soil material to be salvaged.

B. Hydraulic Connection and Confinement/Control

Demonstration of the lack of hydraulic connection and confinement between the production zone and the vertically adjacent aquifers. The application must also demonstrate the extent of hydraulic connection between the production zone and the horizontal monitor well ring. This includes cross sections, isopachs of all potentially affected aquifers and confining units, potentiometric surface maps, and structural contour maps. Isopach and structural contour maps should include the production zone sand, overlying and underlying aquitard units, and overlying and underlying aquifers. Each proposed production zone sand should be identified separately. The slotted or screened intervals of each perimeter and production zone well will need to be keyed to the specific production zone sand.

C. Wellfield Specific Pump Tests

1. Hydraulic properties of production zones
2. During the planning phase, with LQD participation, the anticipated pump test location, pumping rate, and test duration should be determined. The duration of the pump test should be sufficient to adequately stress the overlying and underlying aquifers.
3. Results of aquifer testing which demonstrates that the perimeter zone monitor wells are in communication with the production zone wells.
4. Geologic and hydrologic data from the overlying and underlying aquifers demonstrating the extent of hydraulic communication with the production zone aquifer.

D. Potentiometric Surface Maps

Potentiometric surface maps for production zones to be mined, as well as the immediately overlying aquifer(s) (as applicable), and the underlying aquifer(s) (as applicable), as developed from premining water levels.

E. Baseline Water Quality

There are four sets of data to be collected for baseline water quality: overlying aquifers, underlying aquifers, the horizontal monitor well ring and the production zone.

F. Proposed Target Restoration Values

G. The Proposed Monitor Well Upper Control Limits

H. Aquifer Reclassification and Exemption

I. Details of Location, construction and Completion Details for Monitoring Wells

J. Summary Tables showing location, construction and completion details for Monitoring Wells

K. Mechanical Integrity Test (MIT) Records for Class III Injection Wells

L. Abandonment Records

Include the search for, and handling of exploration drill holes located within the wellfield perimeter monitoring well ring.

III. The Wellfield Data Package Processing

The wellfield data package should be submitted (in duplicate) in a three-ring binder**.**

A. Wellfield packages that are for wellfields identified in the current permit will be processed as a minor revision, and will not be required to complete the public notice for the UIC process, as long as the wellfield remains within the current reclassification boundary.

B. Wellfield packages that are for wellfields not identified in the current permit will be processed as a major revision and will be required to complete the public notice process.

Reference Document 10: Premining Water Quality and Quantity Sampling

Table of Contents for Reference Document 10

I. Introduction

In an effort to improve the consistency of water quality and quantity data submitted to the Land Quality Division, a permit wide premining or baseline groundwater sampling and analysis plan should be prepared and implemented as part of each research and development (R&D) and commercial scale in situ mining permit. Although a very good discussion of a sampling and analysis plan is covered in the Resource Conservation and Recovery Act guidance document (EPA, 1986) on pages 97-128, the following points are presented to emphasize or elaborate on information provided in the RCRA guidance document. A baseline sampling plan should include information on: monitoring locations, sampling frequency, field measurements, sampling methods, sample preservation and handling methods, chain of custody, quality assurance/quality control measures, and water quality constituents. These items are described in more detail below.

Site-specific conditions, mining operations, and the purposes of collecting water quality data may warrant modifications to recommended procedure. An explanation for such modifications should be provided with the baseline monitoring program submitted to the LQD.

II. Monitoring Locations and Frequency

A. Groundwater

1. Sampling Locations

   All groundwater aquifers potentially affected by mining operations must be sampled, including: production zones, overlying aquifers, underlying aquifers, alluvial aquifers, and any unit in hydraulic communication with those aquifers. For permit-wide baseline monitoring, a minimum of three, aerially spaced monitoring wells per affected aquifer should be sampled, with a standard guideline of at least one production zone aquifer well per square mile (Table 1 for recommended well location density and sampling frequency). More samples may be necessary for partially confined aquifers and for shallow, water table aquifers which may react more quickly to seasonal changes and to surface affects. Significant springs or seeps in the permit area and within 2 kilometers should also be included for sampling. *Because of variable hydrogeologic conditions and project dimensions, it is recommended that the applicant coordinate with the LQD in determining the exact number and location of monitoring wells before commencement of baseline groundwater monitoring.*

2. Sampling Frequency

   For permit-wide baseline sampling, representative groundwater water quality samples should be taken quarterly for a minimum of one year to characterize potentially affected aquifers. Static groundwater elevations, reported in tenths of a foot, should be measured quarterly for one year; however, based on hydrologic conditions, LQD may request more frequent measurement and reporting. Continuous monitoring should be considered where hydrographs are needed for

assessment of groundwater recharge or discharge zones. Closed-in pressure readings may be necessary in gassy wells and flowing artesian wells. A casing extension may be used for flowing artesian wells.

For more detailed mining unit sampling, all monitoring wells per mining unit should be sampled four times (minimum of 2 weeks between samplings). Wellfield wells (injection and production) should be sampled four times (minimum of 2 weeks between samplings) during mine unit baseline characterization at a recommended density of 1 well per 4 acres of mining unit. The first and second sampling events should include analyses for all parameters listed in Table 2. The third and fourth sampling events can be analyzed for a reduced list of parameters as defined by the results of the previous samplings (e.g., if certain parameters are not detected during the first and second samplings, then those elements need not be analyzed for during the third and fourth sample outings). Recommended sampling density and frequency for mine unit monitoring as part of wellfield packages is provided in Table 1.

3. Sampling Method

It should be documented that aquifer water and not borehole water is being collected. This can be done by withdrawing at least two casing volumes of water prior to sampling (document pump rate and purging time) or by pumping until pH, conductivity, and temperature readings remain constant (document changes in each constituent against time in tabular form). If recharge cannot match minimal pumping rates in the low permeability aquifers, then a sample can be retrieved by clearing the borehole once and bailing water that subsequently enters the well. Low flow sampling is recommended for low-yielding aquifers. Other techniques may also be employed with prior approval of the LQD. The sample withdrawal technique should be selected based on a consideration of the stability of the parameters of interest and yield of the aquifer. Procedures for evacuating each well prior to sample collection should be documented.

4. Description of Alternative Sampling Methods

If methods are used other than those outlined in 40 CFR Part 136, then a brief description of these alternative methods and associated justifications for their use should be included.

Table 1. Recommended Groundwater Sampling Frequency and Density

Area to be Sampled	Purpose of Sampling	Frequency	Density	Parameters Sampled for	QA/QC
Regional or Permit Wide	LQD review of regional groundwater quality for initial permitting and for obtaining UIC permit	Quarterly for One year	1 well per mi^2 in The production zone aquifer, minimum of 3 wells for overlying and underlying aquifers	Table 2	1 duplicate per quarter, 1 blank per quarter, and 1 standard reported from the lab per quarter
Mining Unit Monitoring Wells	To establish UCLs & to characterize the geo-chemical environment of the buffer zone in case major excursions alter the buffer zone such that restoration is required	4 samples taken at a minimum of 2 weeks apart	All mine unit monitoring wells, including overlying and underlying aquifers	1st sampling Table 2 Next 3, UCL parameters only	1 duplicate, 1 standard & 1 blank for Table 2 parameter set only
Wellfield Wells	To establish restoration goals	4 samples taken at a minimum of 2 weeks apart	1 well per 4 acres	First 2 samplings, Table 2 Second 2 samplings "short list" as defined by results of previous regional or mining unit samplings	1 duplicate per outing 1 blank per outing 1 standard per outing

Table 2. Groundwater Quality Laboratory Analysis Parameters (*WDEQ/LQD)*

Constituents (reported in mg/l unless noted)	
Major Ions	**Metals[3] and Radioactive**
Calcium[(d)]	Aluminum[(d)]
Magnesium[(d)]	Arsenic[(d)]
Sodium[(d)]	Barium[(d)]
Potassium[(d)]	Boron[(d)]
Carbonate as CO_3	Cadmium[(d)]
Bicarbonate as HCO_3	Chromium[(d)]
Sulfate	Copper[(d)]
Chloride	Iron[(d)]
Ammonia as N	Lead[(d)]
Nitrate as N[5]	Manganese[(d)]
Nitrite + Nitrate as N[5]	Mercury[(d)]
Fluoride	Molybdenum[(d)]
Sodium absorption ratio [1]	Nickel[(d)]
Silica[(d)]	Selenium[(d)]
Total Dissolved Solids[2] (TDS) @ 180˚F	Vanadium[(d)]
Conductivity (umhos/cm)	Zinc[(d)]
Alkalinity as $CaCO_3$	Uranium[(d)]
pH (field and laboratory, standard units)	*^{226}Radium[4] pC/L*
	^{228}Radium[4] pC/L
	Gross Alpha (excluding Uranium and Radon) pCi/L

d = dissolved concentration (dissolved metals: those metals in an unacidified sample that pass through a 0.45 micron filter; standard methods for the examination of Water and Wastewater, 21st Edition, 2005.).

t = total concentration (unfiltered sample). Note: Nitric acid preservation and/or sample digestion will be needed to achieve the "total" status. Also, radiochemical constituents should be reported in pC/L.

1 $SAR = Na^{+} / \sqrt{(Ca + Mg)^{++} / 2}$ From WQD Chapter 8, Section 2(o). Note: SAR is unit less.

2 TDS analysis requires filtration through a nominal 1-2 micron glass fiber filter.

3 If the turbidity of the sample is less than 20 NTU (Nephelometric Turbidity Units), the samples can be analyzed for total metals. If turbidity is greater than 20 NTU, or in the absence of NTU data, the sample should be analyzed for dissolved metals.

4 Requirements and procedures for the measurement and analysis of gross alpha particle activity, Radium 226 and Radium 228 shall be the same as requirements and procedures of the U.S. Environmental Protection Agency, National Primary Drinking Water Regulations, EPA-816-F-09-004, effective May 2009. ^{226}Radium and ^{228}Radium may be reported separately.

5 Nitrate may be analyzed by EPA Method 353.2 (automated colorimetry). However, if nitrate plus nitrite as N exceed 10 milligrams/liter, the well should be re-sampled for nitrate + nitrites separately by an EPA approved standard method for drinking water within 5 working days. Note: this analytical approach somewhat deviates from WQD, Chapter 8, Table 1.

B. Surface Water

1. Sampling Locations

On all perennial and intermittent streams flowing through the project area or impacted by drainage from the project, well-mixed zones should be sampled both upstream and downstream of the lands to be affected. Also, on-site water impoundments (including lakes, ponds, or stock dams) or off-site impoundments subject to direct drainage from the project site should be sampled. In addition, a reconnaissance sampling program should be conducted to include samples at groundwater discharge points and on channels draining different geologic units. Surface water quality samples should be collected from benchmarked sampling points where flow can be measured or calculated.

2. Sampling Frequency

On perennial and intermittent streams, samples should be collected monthly in order to identify seasonal variation. On ephemeral streams, one sample should be taken as early as possible during snowmelt runoff, and one should be taken during a thunderstorm runoff event. The use of passive samplers on ephemeral streams is recommended.

III. Field Measurements

Field data sheets should be generated for each water-quality sample or water level collected. Along with laboratory results, field data sheets should be submitted to LQD. The following parameters serve as a minimum for data to be collected in the field. For low flow sampling ensure the field parameters have stabilized (three consecutive readings spaced 5 minutes apart, are within 10% of previous reading) prior to collecting the sample.

A. Groundwater

pH (report to nearest 0.1 standard units)

temperature (°C)

electrical conductivity, (umhos/cm corrected to 25°C)

water level, reported to the nearest 0.1 foot AMSL (above mean sea level) or 0.1 psi

Water level measurements shall be made immediately before sampling. Wells that are free-flowing artesian should be completely closed in and stabilized before pressure measurements.

total depth of the well

number of casing volumes purged prior to sampling, if the casing volume purge method is used (ground water only)

B. Surface Water

pH (report to nearest 0.1 standard units)

temperature (°C)

electrical conductivity (umhos/cm corrected to 25°C)

instantaneous discharge (ft3/second)

turbidity (NTUs)

dissolved oxygen (DO)

IV. Sample Preservation and Handling

Because many parameters are unstable after sample collection and cannot be analyzed in the field due to logistical constraints, sample preservation is recommended. Samples should be kept on ice (4 degrees C) and stored in the dark until analysis. The operator is responsible for ensuring all sample preparation, handling and preservation procedures required for the analytical method used.

V. Chain of Custody

A. An adequate chain-of-custody program is to be described.

VI. Quality Assurance/Quality Control

Quality control during sampling should be implemented to detect any data errors that may result from improper sampling or analytical methods, poor sample preservation, or collection of non-representative samples. The following quality control samples should be collected, analyzed and reported for every twenty (20) samples or once every sample collection round, whichever is less, to help verify that the sample collection system is producing reliable information. The results of all field and lab QC samples are to be included along with the analytical reports submitted to the DEQ/LQD, including a comparison of original and duplicate samples and relative percent difference.

A. Duplicate Samples.

At randomly selected stations duplicate samples are collected by filling two separate bottle sets from any one station and preserving, storing and shipping the sets in an identical manner. This provides a check of precision.

B. Sample Preservation Blanks.

Field blanks are essentially low standards produced in the field. The same quantity of appropriate preservative should be added to sample bottles filled with distilled water. Field blanks check for analytical recognition of zero values, any positive bias from contaminated sample bottles or preservatives, and any contamination from atmospheric sources (e.g., airborne dust).

C. Documentation of Standardizing or Calibration of Equipment.

The frequency and method of standardizing or calibrating test equipment brought into the field needs to be documented; typically, this equipment includes pH and conductivity meters.

VII. Reporting and Analysis

The results of water quality analyses should be tabulated in the application. The following information is required to be submitted to LQD for each sample:

1. Sample collection and preservation methods;
2. Sample site identification table (ID, location, aquifer, etc.);
3. Laboratory identification (if different than sample site ID);
4. Date and time of sample collection;

5. Date analyzed;
6. Discharge or water level at time of sampling;
7. Field parameters including field sheets;
8. Raw analytical results (including associated units);
    - Results of QA/QC samples should be included.
    - Samples with analytical results below the detection limit should be reported as "<" detection limit.
    - Premining samples that exceed EPA primary or secondary drinking water standards should be flagged in the raw data tables or compiled in a separate table.
9. Statistical analysis of results.
    - Results should be tabulated for each monitoring site to provide: number of samples collected, mean, median, maximum, and minimum concentrations.
    - When computing statistics, results below the detection limit should be included as either the detection limit or one-half the detection limit, stating which method was chosen.
    - Graphical presentation of water-quality and water level data is encouraged to increase visualization of trends. Examples of such may include piper or trilinear diagrams, stiff diagrams, boxplots, and time-series graphs.

Reference Document 11: Review Procedures, Acceptance Criteria and NRC Reference Documents

Table of Contents for Reference Document 9

VIII. Review Procedures and Acceptance Criteria

For information uniquely required for uranium or thorium recovery facilities, the Division will utilize applicable review procedures and acceptance criteria found in NUREG 1569 including criteria within 10 CFR Part 40 Appendix A with the following exceptions:

A. NUREG 1569 Section 2.2.3(2), 22½-degree sectors centered on the 16 cardinal compass points is not required.

B. NUREG 1569 Section 2.2.3(1)(f), the applicant may use land use categories that are consistent with Section IV(A) of Guideline 4 and Reference Document 1, Attachment 1.

IX. NRC References

For uranium or thorium recovery facilities, the following NRC Reference Documents and The following NRC Reg. Guides and NUREG Documents shall be referred to for the applicable sections.

	NUREG 1569		Guideline 4	
Reg. Guide	Revision, Date	Section(s)	Revision, Date	Section(s)
1.109	0, 1977	7.3	0, 1977	IV(S)
1.86	0, 1974	5.7	Withdrawn, see note	IV(R)
3.11	2, 1977	2.6, 3.1, 4.2, 5.3	3, 2008	VI(B)(1), VI(M)(5), IV(R), Reference Document 3 Section V
3.11.1	1, 1980	4.2, 5.2, 5.3,	Withdrawn	VI(M)(5), IV(R)
3.46	0, 1982	Throughout	0, 1982	Throughout
3.51	0, 1982	7.3	0, 1982	IV(S)
3.56	0, 1986	5.7	0, 1986	IV(R)
3.59	0, 1987	7.3	0, 1987	IV(S)
3.63	0, 1988	2.5	0, 1988	IV(C)
4.14	1, 1980	2.9, 5.7	1, 1980	IV(J)(2), IV(R)
4.15	1, 1979	5.1, 5.7	2, 2007	IV(R)
8.10	0, 1977	5.7	2, 2016	IV(R)
8.13	3, 1999	5.5	3, 1999	IV(R)
8.15	1, 1999	5.7	1, 1999	IV(R)
8.2	0, 1973	5.1	1, 2011	IV(R)
8.22	1, 1988	5.7	2, 2014	IV(R)
8.29	1, 1996	5.5	1, 1996	IV(R)
8.30	1, 2002	5.7	1, 2002	IV(R)
8.31	1, 2002	4.1, 5.1, 5.2, 5.3, 5.4, 5.5, 5.7	1, 2002	VI(M)(5), IV(R)
8.34	0, 1992	5.7	0, 1992	IV(R)
8.36	0, 1992	5.7	0, 1992	IV(R)

8.37	0, 1993	5.7	0, 1993	IV(R)
8.7	1, 1992	5.7	2 , 2005	IV(R)
8.9	1, 1993	5.7	1, 1993	IV(R)
Note on RG 1.86: For the release for unrestricted use of materials and equipment, guidance is included in NUREG-1757, Vol. 1, describing the current NRC staff practice for release of materials and equipment. In addition, RG 8.21, "Health Physics Surveys for Byproduct Material at NRC-Licensed Processing and Manufacturing Plants," RG 8.23, "Radiation Safety Surveys at Medical Institutions," and RG 8.30, "Health Physics Surveys in Uranium Recovery Facilities," provide information similar to that included in Table 1 of RG 1.86. Specifically, Table 1 in RG 1.86 is now included in RG 8.23 and is titled, "Table 3 Acceptable Surface Contamination Levels for Uncontrolled Release of Equipment." Also note that "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material" dated April 1993 may be applicable to applicants.				

	NUREG 1569		Guideline 4	
NUREG	Revision, Date	Section(s)	Revision, Date	Sections(s)
1620	1, 2002	2.7	1, 2002	Reference Document 3, III(F)(4)(a) ; III(G)(1)(b) ; Reference Document 5(III)(A)(1)(b) and III(F)
1623	0, 1998	2.7, 3.1	0, 1998	VI(B)(1), Reference Document 3, III(F)(4)(a) ; III(G)(1)(b) ; Reference Document 5(III)(A)(1)(b) and III(F)
CR - 5849	Draft, 1992	2.9	Draft, 1992 Unavailable through NRC	IV(J)(2)
1575	1, 2002	2.9, 5.7, 6.2, 6.4	1, 2002	IV(J)(2), IV(R), VII(D)(6), VII(D)(8)
CR - 6733	0, 2001	3.2, 5.7, 7.5	0, 2001	VI(B)(1), IV(R), IV(T)
CR - 4604	0, 1988	5.7	0, 1988*	IV(R)
1475	0, 1994	5.7	1, 2011	IV(R)
CR - 3709	0, 1985	5.7	0, 1985*	IV(R)
CR - 3967	0, 1986	5.7	0, 1986*	IV(R)
1727	0, 2000	6.5, App E (2.1)	0, 2000	N/A
1748	0, 2001	7.1, 7.2, 7.6, 9.2, 9.3, 9.5, 10.2	Final Report Completed in 2003, Available	N/A
0706	0, 1980	7.5	0, 1980*	IV(T)
CR – 4088	0, 1985	Appendix D	See RG 3.59	

CR – 2011	0, 1984	Appendix D	MILDOS has been updated, current manual is NUREG/CR-7212	
1549	0, 1998	App E (2.1)	0, 1998 Unavailable through NRC	
CR - 5512	0, 2001 (Vol 2) 0, 1996 (Vol 3)	App E (2.1)	0, 2001 (Vol 2) 0, 1996 (Vol 3)	
* Available through NRC; however not listed under "NUREG" section of website				

Appendix C to Subsection 4.3
Application Checklist

Department of Environmental Quality

WYOMING

Part 1 Adjudication File and Appendix C (Reference Document 2)

- ☐ See Guideline 4 Reference Document 2
- ☐ Form 1- UIC Application for Permit to Mine
- ☐ Form 3 License to Mine/ Source Material License Application
- ☐ Permit/License Fees
- ☐ Proof of Publication Notice
- ☐ Reclamation Bond Estimate
- ☐ Legal Land Description of Proposed Permit Area
- ☐ Surface Owner Consent
  - ☐ Instrument of consent from the resident or agricultural owner, if different from the mineral estate owner, granting permission to enter and commence surface mining, and also written approval of the applicant's mining and reclamation plans
  - ☐ Instrument of consent from the surface landowner, if different from the owner of the mineral estate, including any lands privately owned but not covered by the provisions of W.S. §35-11-406(b)(xi), to the mining and reclamation plan
  - ☐ Landowner Consent - If the applicant proposes to affect any land which lies within 300 feet of an existing occupied dwelling, home, public building, school, church, community or institutional building, park or cemetery, then written consent of said landowners must be obtained and placed in the permit application.
  - ☐ If BLM lands are present within the proposed permit area, the timing of granting consent could present complications as LQD does not consider an application complete until all consents are provided in the permit. However, BLM approval of the mining operation may come late in the Technical Review process. The LQD and BLM have cooperated to allow a mine application to be considered complete and proceed to Technical Review before final BLM approval has been granted
    - ☐ If federal minerals will be mined under surface administered by the BLM, “consent” is considered granted when BLM approves the 3809 plan of operation. Upon receipt of a 3809 plan of operations, the BLM Authorized Official (AO) may provide LQD with a statement that the operator has mining claims and he has received a plan of operations required by 43 CFR 3809. Final consent is not given until the operations plan is approved. LQD and BLM have agreed to use the BLM’s acknowledgement of the applicant’s right to file an operations plan as satisfaction of the LQD completeness criteria. Once the BLM approves the operations plan, the applicant will submit the approval or other documentation from the BLM to LQD as an addition to the permit. Close coordination is required between the applicant, BLM, and LQD to ensure the LQD permit application and the BLM plan of operations are similar and are approved relatively at the same time.

- ☐ On BLM managed lands where the mineral will not be mined but is adjacent to the mining area and whose surface will be used for stockpiles, roads, or other surface uses, may gain approval several different ways under Title 43 regulations. These include negotiating with the adjacent claim holder if applicable or file for a right-of-way for surface use.
- ☐ If BLM managed lands are proposed to be within the permit area but no mining or disturbance is to occur on those lands, consent from the BLM is required to show that BLM concurs with those lands to be within the permit area. The consent may take the form of some type of surface use agreement issued by the BLM
- ☐ On split estate lands, if the operator has consent from the private surface owner to mine uranium, a 3809 plan of operations does not have to be filed with the BLM (see 43 CFR 3809.31(d)).

☐ For lands managed by the State Land and Investment Board, an Instrument of Consent will be required from the board or its representative

☐ Certification Page

☐ Appendix A For lands within Permit/Licensed Area

- ☐ Owners of record for surface rights (alphabetically with addresses)
- ☐ Owners of record of the mineral rights (alphabetically with addresses)
- ☐ Maps showing location of ownership for surface and mineral rights

☐ Appendix B For lands adjacent (within one half mile) of permit/license

- ☐ Owners of record for surface rights (alphabetically with addresses)
- ☐ Owners of record of the mineral rights (alphabetically with addresses)
- ☐ Maps showing location of ownership for surface and mineral rights

☐ Appendix C Legal Land Description and Proposed Permit/Licensed Area

- ☐ Lands to be tabulated on LQD Forms C-1 and C-2 and signed by applicant. Separate Tabulations are as follows
  - ☐ Tabulation of all lands in the proposed permit/license area including all transportation corridors and facilities; etc., by legal (¼, ¼) section, township, range, county, and municipal corporation, if any (LQD Form C-1 must contain original signature. Number of acres for each entry listed
  - ☐ If a bearing and distance description is used, it must be presented in either quadrant bearings or azimuths with horizontal distances and “bearing and distance” or “metes and bounds” description (LQD Form C-2, one copy must contain an original signature). The number of acres in each bearing and distance description must be listed. A certified statement from a licensed surveyor stating the metes and bounds of the

permit area close must be included.

- ☐ For lands where the applicant claims no right to mine, a tabulation by legal description, of all those lands within the permit (or amendment) area with the number of acres for each entry.

- ☐ List and map identifying the location of all lands in the permit area which also occur in other permit areas (i.e., dual permitted and/or license to mine areas), including the land use agreements (e.g., easements, encroachments, overstrip agreements, etc.) and all supporting legal documents.

- ☐ An original U.S. Geological Survey topographic map, clearly outlining and identifying the lands within the proposed Permit or R&D License area. Photo copies or other similar copies are not acceptable unless prior approval is obtained from the LQD.

☐ Appendix E

- ☐ The application shall show the following information on a U.S.G.S. topographic map base, clearly outlining and identifying the lands to be within the proposed permit and amendment area

  - ☐ The permit and amendment area boundary (clearly identified)

  - ☐ Lands to be affected over the life of the mine

  - ☐ A digital file containing the proposed permit boundary in DWG or shapefile format

- ☐ Additional information on map at a scale between 1"=400' TO 1000'.

  - ☐ Location and names, where known, of all existing roads, railroads, private or public right of way and easements, utility lines, pipelines, buildings, lakes, streams, creeks, springs, and other surface water courses, oil wells, gas wells, and water wells.

  - ☐ Drainage area within and surrounding the proposed permit area, including all surface water features

  - ☐ Location and listing of the ownership and use of all buildings on or adjacent to the proposed affected portions of the permit/licensed area

  - ☐ Probable limits of all previously disturbed or proposed disturbances by underground mining; and probable limits of all surface mining (active or inactive); on or adjacent to the land proposed to be affected

  - ☐ Map and list of the political boundaries of special districts such as water. police, fire, conservation, public and private parks, and cemeteries.

  - ☐ List of all know drill holes and monitor wells of 4 inch or less than diameter that have been registered with the State Engineer office.

☐ List of Other Permits or Construction Approvals

- ☐ Hazardous Waste Management program under RCRA
- ☐ UIC Program under the Safe Drinking Water Act SWDA (as it pertains to wells other than Class III)
- ☐ WYPDES under the Clean Water Act (CWA)
- ☐ Prevention of Significant Deterioration (PSD) under Clean Air Act (CAA)
- ☐ Nonattainment program under the CAA
- ☐ National Emission Standard for Hazardous Pollutants pre construction approval under the CAA
- ☐ Dredge and fill permits under Section 404 of the CWA
- ☐ Source Material License
- ☐ State Engineer Permits
  - ☐ A copy of the WQD/SEO approved pond design does not have to be included in the original license application but should be inserted later after WQD/SEO approval.
- ☐ Documentation of county zoning compliance
  - ☐ Written verification from the city or county (appropriate zoning or planning department) of approval for the mining operation (if affecting new lands) or that no zoning ordinances apply. (W.S. 35-11-406(m)(iii))
  - ☐ Other relevant environmental permits, including State permits
    - ☐ Copies of requested approved state and federal permits associated with this application (e.g. well permits, pond construction permits, discharge permits, fish and wildlife service permits) should be placed in the license application. It is not necessary to include the documentation associated with these permits, but simply build a table to illustrate the various approvals

Part II Appendix D Environmental Baseline Data

Appendix D-1 History and Land Use

- ☐ Describe History of the permit/license as it pertains to a regional historic setting particularly to the impacts and uses of land
- ☐ Provide map of historic and current land uses within the permit/licensed area
- ☐ Lists any lands that have been listed as rare or uncommon by the Wyoming Environmental Council or other lands that have mining restrictions or are designated off limits to mining by federal agencies
- ☐ Use only the following land use categories
  - ☐ Cropland, Pastureland, Grazingland, Forestry, Residential, Industrial

commercial, Recreational, Fish and Wildlife Habitat, and Developed Surface Water Resources

Appendix D-3 Cultural and Paleontological Resources

- ☐ A professionally conducted Level III pedestrian survey fulfilling the U.S. Secretary of Interiors Standards for Archaeology and Historic Preservation should be tabbed in this appendix but placed in a separate volume, so it can be filed separately under "restricted access"
- ☐ The tabbed section of this appendix should briefly summarize the archaeological and paleontological resources of the permit and adjacent areas in a summary manner. The summary should not describe sites in detail or show their location
- ☐ For guidance in the preparation of Appendix D-3 please refer to LQD Guideline No. 11A detailed description of how the radionuclides were used at the site

Appendix D-4 Climatology

- ☐ Description of climate conditions
- ☐ 1 Year of onsite station data or nearest station within 50 miles if it can be shown to be representative of the site conditions. For uranium and thorium operations onsite data is required.
  - ☐ Precipitation (average by month and annual total in inches)
  - ☐ Storm Events
  - ☐ Wind- average monthly and yearly wind direction and velocity
    - ☐ Rose Diagram
  - ☐ Temperature- Maximum, minimum, monthly average, and yearly temperature
  - ☐ Recommended Parameters of relative humidity, dew point, and barometric pressure
- ☐ For Uranium and thorium recovery facilities the applicant should include any additional requirements from NUREG 1569 Section 2.5.1
  - ☐ NUREG 2.5.1 Areas of Review
    - ☐ NWS Station data, including locations of all NWS stations within an 80-km [50-mi] radium; and available joint frequency distribution data by wind direction, wind speed, stability class, period of record, and height of data measurement.
    - ☐ On-site meteorological data, including locations and heights of instrumentation, descriptions of instrumentation, and joint frequency distribution data, if NWS data representative of the site are not available
    - ☐ Miscellaneous data, including average mixing layer heights, a

description of regional climatology, and total precipitation and evaporation, by month.

- ☐ Existing air quality
- ☐ Occurrence of severe weather
- ☐ Impact of the terrain, lakes, etc on the local meteorology
- ☐ Data on averages of temperature and humidity

Appendix D-5 Geology/Hydrogeology (Reference Document 3)

- ☐ I Introduction
  - ☐ Certified by a Professional Geologist or qualified Professional Engineer registered in the State of Wyoming
- ☐ II Regional Setting
  - ☐ Regional Geology
    - ☐ General Geological Setting
    - ☐ Regional Geological Map(s) and Cross Section(s)
    - ☐ Regional Hydrostatigraphy
    - ☐ Regional Structural Geology
    - ☐ Regional Surficial Geology
  - ☐ Regional Hydrogeology
    - ☐ Regional Potentiometric Surfaces
    - ☐ Regional Groundwater Recharge and Discharge
    - ☐ Regional Hydraulic Connection of Aquifers
  - ☐ Regional Water Quality
- ☐ III Permit/License Area Hydrogeology
  - ☐ Site Geology
    - ☐ Site Geology and Hydrostatigraphy
      - ☐ Includes all geological formations and units within the permit/license area and adjacent aquifers and aquitards
      - ☐ For each hydrostratigraphic unit, the name, general description, depositional environment, extent, thickness, and continuity should be described
      - ☐ Hydrostratigraphic units should be identified and described using stratigraphic columns, lithologic and geophysical logs, geologic maps, and published data

- ☐ Particular detail given to describing the production zone and aquitards above and below. Demonstration of the containment of the production zone relative to the overlying and underlying aquifers.
- ☐ Supporting documentation shall include a discussion of cores, well logs, stratigraphic cross sections, stratigraphic columns and hydraulic properties

☐ Isopach Maps

- ☐ Generated for each production zone aquifer, overlying aquitard, overlying aquifer, underlying aquitard, and underlying aquifer. Average thickness and range should be described.
- ☐ Cross Sections
  - ☐ Hydrogeology should be described in geological cross sections and should be confirmed with geophysical logs and field investigations.
  - ☐ Cross section(s) extending through the affected area should identify:
    - ☐ Potentiometric surface
    - ☐ Monitoring wells projected onto the cross section line, their slotted or screened interval(s), and indication of the water levels
    - ☐ Lithologies
    - ☐ Production zone to be mined
    - ☐ Geological features such as faults, paleochannels, etc.
    - ☐ Extent of mining (vertical and horizontal)
    - ☐ Any historical underground mine workings
    - ☐ Aquifer and aquitards
    - ☐ Areas of aquifer communication
      - ☐ Hydrologic boundaries
      - ☐ Recharge and discharge areas
  - ☐ Consistent vertical and horizontal scales on all cross sections
  - ☐ Supporting information may include geophysical logs, resistivity, gamma-ray, self-potential, density, and/or lithologic logs
  - ☐ Legible electronic copies of drill hole logs for every hole

and well used to develop the cross section

- ☐ Is the spacing between drill holes or wells used for developing the cross section sufficient to justify the geologist's interpretation? Minimum of 1,500 feet between each well along the cross section.
- ☐ Horizontal and vertical extent of the production zone is to be shown on the cross section passing through the proposed wellfield

- ☐ Site Structural Geology
  - ☐ Geological Structure
    - ☐ Includes description of influence on aquifer properties, or structures that serve as a hydrological boundary such as faults, fractures, outcrops, and dips
  - ☐ Structural Contour Map
    - ☐ Contains structural contour (elevation) maps for each production zone aquifer, overlying aquitard, overlying aquifer, underlying aquitard, and underlying aquifer.
- ☐ Ore and Rock Mineralogy
  - ☐ A geochemical, lithological, and mineralogical description of the production zone.
  - ☐ Core analysis
    - ☐ Geochemical characterization of the rock. Core samples or other physical samples should be analyzed, and the results should be provided in the application.
  - ☐ Ore Zone Mineralogy
    - ☐ Description of the mineralogy of the host rock in addition to the description of the ore. Includes description of ore mineral(s) and grade.
  - ☐ Ore Amenability to Solution Mining
    - ☐ Includes brief summary or reference to the recovery solution to be used during mining. A discussion on geochemistry and the ability of the solution to dissolve the ore should be included.

- ☐ Site Hydrogeology
  - ☐ Potentiometric Surface

- ☐ Water level data collection
  - ☐ Multiple water level elevation measurements should be measured quarterly for one year.
- ☐ Potentiometric surface maps of all affected aquifers
  - ☐ Potentiometric surfaces with sufficient data points to spatially define all potentially affected aquifers including all overlying and the vertically adjacent underlying aquifers and production zone aquifers must be submitted. Potentiometric surfaces should be extended into all units which are in good hydraulic communication with the aquifer, including clinker, alluvium, etc.
  - ☐ The premining potentiometric surface for these aquifers should be defined and located on a 1 inch = 1,000 foot scale map(s) which encompass the permit area and adjacent areas. This map should also show well locations, groundwater recharge and discharge areas, and other hydrogeologic features. Wells used in developing the potentiometric surface map should all be located and identified on the map with the particular water elevation and date of observation at each well shown. Legible electronic copies of logs of drill holes and wells used to develop the potentiometric surface maps are requested
  - ☐ Hydrologic Boundaries
- ☐ Adequately stress the system to test aquifer properties

☐ Site Groundwater Recharge and Discharge

☐ Site Specific Groundwater and Surface Water Interactions

☐ Lab tests illustrating the hydraulic properties of the Aquifer(s) and Aquitard(s)

- ☐ Includes but not limited to effective porosity, hydraulic gradient, velocity, storage coefficients, specific yield, transmissivity or hydraulic conductivity, direction(s) of preferred flow under hydraulic stress, and a discussion on how these values were derived

☐ Hydraulic connection and Containment of Aquifers

- ☐ Description of the hydraulic connection between production zones, overlying aquifers, underlying aquifers, and the hydraulic characteristics of any influencing boundaries in or near the proposed wellfield

- ☐ Baseline Aquifer pumping should:
  - ☐ Determine transmissivities, storage coefficients, hydrologic boundaries, leakage, aquifer homogeneity, and isotropy. For example, a multi-well pump test evaluation, as described by Theis (1935), Cooper and Jacob (1946), Boulton (1954), or as summarized by Lohman (1979) is suggested.
  - ☐ Assess the hydro containment of any aquitards
  - ☐ Determine any hydrologic communication that may occur between the production zone and overlying and underlying aquifers
  - ☐ Adequately stress the system to test aquifer properties
  - ☐ Determine the quantity of groundwater to be removed at various stages of mining
  - ☐ Estimate the areal extent of static water level declines in potentially affected aquifers
  - ☐ Evaluate potential impacts to adjacent water resources due to mining
  - ☐ Estimate groundwater conditions and aquifer characteristics likely to exist after reclamation
  - ☐ A minimum of one pump test in each aquifer to be mined is required. If faulting occurs within the production zone, multiple pump tests may be needed to characterize conditions within each fault block and across the fault
  - ☐ Production zone, overlying and underlying. Monitor wells located in aquifers above and below the pumped aquifer should be placed in close proximity to the pumping well
  - ☐ An aquifer pump test plan or geohydrologic characterization plan should be discussed with the LQD during the early stages of the permitting process in order to facilitate LQD approval. A copy of the aquifer pump test plan should also be included in the permit application.

    Generally, aquifer pump tests utilizing the Neuman-Witherspoon method (for leaky confined aquifers) of analysis or other method yielding equivalent information are recommended.
  - ☐ Identify both a chronological order of events and decisions that were made during testing
  - ☐ The following information should be submitted for each

aquifer or pump test:

- ☐ All data obtained from the aquifer pump tests and measurements necessary to evaluate the pumping results
- ☐ Method of analysis
  - ☐ List of the methods and analyses and equations used
  - ☐ List the assumption upon which the equations were based
  - ☐ List how assumptions were met by the physical conditions
  - ☐ Present sample calculation

- ☐ Graphs which show
  - ☐ All drawdown and recovery data
  - ☐ Curve or line fits
  - ☐ Match points u [a dimensionless time parameter], W(u) [well function; exponential integral]
  - ☐ Boundary and casing storage effects
  - ☐ Pump interruptions
  - ☐ Discharge adjustments
  - ☐ t_o [time pumping began to when pumping ended]
- ☐ Maps indicating the pumping well, monitoring wells, and associated maximum drawdown results for each test
- ☐ Correction factors and their associated supportive data and the method used for data adjustment; strongly encouraged to include barometric pressure
- ☐ Result of analysis
- ☐ If the pump test shows communication between aquifers that could be attributed to historic drill holes a reasonable attempt will be made to locate those holes and properly seal them. Additional aquifer testing may need to be performed to determine if the sealing had the desired effect.

☐ Wells and Drill Holes within the permit/license boundary

- ☐ Wells
  - ☐ Well location and construction

- ☐ Tabulate the appropriate information from Appendix E, including the names (or numbers), descriptions, and a map of all wells installed for water supply or monitoring and all wells which penetrate the production zone aquifer(s). The description shall include: names of present owners, well completion data, producing interval(s), aquifer, and variations in water level to the extent such information is available in the public records and from a reasonable inspection of the property. It may be necessary to conduct downhole inspections to determine well depth and completion intervals for wells within the permit boundary if such information is not available
- ☐ Site Groundwater Use
  - ☐ Summary of groundwater in the area with estimated amount of water (gpm) consumed for domestic, stock, and irrigation purposes.
  - ☐ Impacts to groundwater levels or quality from local users or nearby operations that may affect groundwater quality
  - ☐ For uranium or thorium recovery facilities information on past, current, and anticipated future water use including descriptions of local groundwater well locations, types of use, amounts used and screened intervals
- ☐ Well Completion Reports
  - ☐ A summary table of all available well completion and well development details for monitor wells and other wells located within the permit boundary should be submitted. Consult the LQD to determine if it may be acceptable to submit this information in electronic format.
- ☐ Groundwater Water Rights
  - ☐ Tabulate and either provide a map or reference another map in the application of all adjudicated and permitted groundwater rights. Locations and present owners of all wells inside and within 3 miles of the permit area should be included. Information concerning plugging and well completion and producing interval(s) (to the extent such information is available in the public record or by a reasonable inspection of the property) is also requested

☐ Historic Drill Holes and Abandonment

- ☐ Provide summary of historic exploration and

development activities

- ☐ Drill hole and abandoned wells maps and tables
  - ☐ A list and map of all abandoned wells and drill holes, giving location, total depth, producing interval(s), type of use, condition of casing, plugging procedures, date of completion, and date of plugging for each well or drill hole within the permit area and on adjacent areas to the extent such information is available in public records and from a reasonable inspection of the property
- ☐ Geophysical and Driller's Log
  - ☐ In addition to the logs supporting the cross sections mentioned above, legible electronic geophysical logs are also required for any monitor well, any well used in a pump test, or any well or drill hole that is used to provide required information in the permit (e.g. to prepare potentiometric surface maps). As a practice, LQD will accept a representative data set based on LQD's choosing, with the rest available on the mine site
- ☐ Verification of proper well abandonment
  - ☐ To ensure proper abandonment procedures were used, plugging should be verified to the extent such information is available in public records and from a reasonable inspection of the property
  - ☐ Include commitment in the Mine Operation Plant to update the wells and drill hole information in the annual report and place a copy in Appendix D-5 of the permit
- ☐ Site Water Quality
  - ☐ Monitoring network and parameters
  - ☐ Methods
  - ☐ Summary of the sampling results (laboratory and field)
  - ☐ Statistical analysis and water quality relationships and trends
  - ☐ Premining groundwater classifications
  - ☐ QA/QC procedures

☐ Part IV General Mine Unit Hydrogeology

- ☐ Information on specific mine units or wellfield areas is to be submitted with each wellfield data package. This section may be omitted from the permit application document if the first wellfield data package is not being submitted simultaneously. Each wellfield data package shall be in a separate three-ring binder including the first wellfield if it is submitted with the initial permit application.

  The main purpose of the wellfield data package is to increase the resolution of hydrogeologic information at the specific mine units. Reference Document 9, Wellfield Package, of this document contains specific information about the approach and requirements for the wellfield data package.

- ☐ Part V Seismology (optional for operations not pertaining to uranium and or thorium)
  - ☐ Seismic Hazard Review
  - ☐ Seismicity
  - ☐ Historic Seismicity Near Permitted Area
  - ☐ Seismic Risk; and
  - ☐ Probabilistic Seismic Hazard Analysis
  - ☐ For uranium and thorium operations any additional information contained in NUREG 1569 Section 2.6.1 Geology and Seismology
    - ☐ NUREG 2.6.1 Geology and Seismology Areas of Review
      - ☐ Survey of pertinent literature and field investigations.
        - ☐ Regional seismicity
        - ☐ Seismic history
        - ☐ Local stratigraphy
        - ☐ Petrology
        - ☐ Lithology of rock units
        - ☐ Tectonic features
        - ☐ Continuity of geology strata at the site and nearby
      - ☐ Geologic, structural, and stratigraphic maps and cross sections
        - ☐ Representative core and geophysical well-log data
        - ☐ Isopach map of the intended zone of injection or production and associated confining beds
        - ☐ All conclusions regarding the lateral continuity and vertical thickness of the mineralized zones, surrounding lithologic units, and confining zones as based on lithologic logs from core and drill cuttings, geophysical data, remote-sensing measurements, and the results of other appropriate investigations should be reviewed

- ☐ Data on the geochemistry of the ore zone and geological zones surrounding the mineralized zone that could be affected by injected lixiviant
- ☐ Information on unique minerals or paleontologic deposits of scientific interest should be included
- ☐ Descriptions of the effects of the planned operations at the site might have on the future availability of any other mineral resources

Appendix D-6 Surface Hydrology (Reference document 5)

- ☐ Part I Introduction
  - ☐ Include discussion of Surface Water flow data (streamflow data for surface water monitoring stations) and surface water station details (surface water station location and equipment information).
- ☐ Part II Regional Surface Hydrology
  - ☐ Present brief discussion of the regional surface water features in the area
- ☐ Part III Local Surface Hydrology
  - ☐ Watershed and Stream Channel Characterization
    - ☐ Names, Description, and map of all such waters, including ephemeral drainages and permanent impoundments
    - ☐ Watershed Networks
      - ☐ Drainage network map
      - ☐ Include all streams with defined channels (the extent of stream channels should be checked in the field and/or with aerial photography); a defined channel is generally distinguished by a “blue line” on a quadrangle map, yet judgment should be used to identify stream channels relative to the scale and type of map being used
      - ☐ Distinguish perennial, intermittent, and ephemeral streams. For uranium or thorium recovery facilities provide an assessment of typical seasonal ranges and averages as well as the historical extremes for levels of surface-water bodies and aquifers (per NUREG 1569, Section 2.7.1(5))
      - ☐ Show boundaries of contributing watersheds
      - ☐ Locate stream gages; and
      - ☐ Show playas, groundwater discharge areas, impoundments (stock ponds), springs and other hydrologic features (water wells, stock tanks, and windmills).
    - ☐ Watershed Delineation

- ☐ Provide a table identifying drainage area for all watersheds that will be affected by mining activities

- ☐ Water Quantity Measurements
  - ☐ Baseline information needs to be gathered in order to assess potential impacts from the proposed operation. Generally speaking, ISR operations do not physically disturb a stream channel to the point of requiring reconstruction

- ☐ Baseline Water Quality
  - ☐ In accordance with Reference Document 10

- ☐ Surface Water Rights
  - ☐ List and map all permitted surface water rights within and adjacent to (½-mile buffer) of the permit/license area boundary
  - ☐ If water will be impounded on site as part of the sediment control program, the listing of water rights should be extended to three miles downstream
  - ☐ For each of the surface water rights the following should be tabulated
    - ☐ Source
    - ☐ Permit Number
    - ☐ Location
    - ☐ Facility name (reservoir, ditch)
    - ☐ Applicant name
    - ☐ Acre-feet; and
    - ☐ Use (irrigation, stock, etc.)

- ☐ Surface Water and Groundwater Interactions
  - ☐ Any surface water and groundwater interactions should be identified and discussed. Information should include the following
    - ☐ The location, flow, water-quality, and aquifer source of springs and seeps
    - ☐ General relationship of streams to alluvial groundwater systems, including influences on water quality

- ☐ Potential for Erosion and Flood Damage to In Situ Recovery Facilities
  - ☐ An assessment of the potential for erosion or flooding that may require special design features or mitigation measures to be implemented shall be included. If applicable, the proximity of surface water features to in situ recovery facilities, including wellfields, should be discussed
- ☐ Erosion Control Measures
  - ☐ LQD requests ISL operations include within the permit, text discussion which details the Best Management Practices for erosion and sediment control including the following:
    - ☐ Description and drawings of typical Erosion Control Measures (ECM) to be employed on the mine site. Including information such as rock size for check dams.
    - ☐ Maintenance and Inspection Plan
    - ☐ Detailed map of all Erosion Control Measures in the annual report
      - ☐ Required Storm Water Discharge Permit with WQD
      - ☐ WQD WYPDES Storm Water Prevention Plan (SWPP)
        - ☐ Permit/License application should summarize information provided to WQD SWPP
  - ☐ Temporary Diversion
      - ☐ Designed for 2 yr., 6 hr. event or a duration that yields higher peak flow.
      - ☐ Recommended design event should follow Guideline 4 reference document 5 recommendations.
  - ☐ Culverts
      - ☐ Designed to pass the predicted peak flow from a 10 year storm event without static head at the entrance.
      - ☐ Culverts a minimum of 18 inches in diameter

Appendix D-7 Soils (Reference document 6)

- ☐ Baseline Order 3 levels soil survey using methods of the Natural Resource Conservation Service (NRCS) and in accordance with WLQD Guideline 1 "Soils and Overburden" as it pertains to soil baseline characterization

Appendix D-8 Vegetation

- ☐ General Baseline
  - ☐ Survey of vegetative cover and species diversity on the proposed affected land determined by scientifically acceptable methods as described in WLQD Guideline 2 "Vegetation".
  - ☐ All sampling plans should be approved by LQD prior to Implementation (if they differ from guidance)
  - ☐ Baseline Vegetation Map/Mapping
    - ☐ Plant community mapping should extend ½ mile outside the permit. Communities should be clearly delineated and labled
    - ☐ Delineate the extent and location of each Reference Area (REFA) if applicable
    - ☐ Delineate the extent and location of areas dominated by noxious weed species.
    - ☐ Delineate the location of any threatened or endangered species observed
    - ☐ The map should show the outline of the permit boundary and the outline of all areas to be affected by the proposed operation
    - ☐ Display the locations of all vegetation sample points
    - ☐ Display the location and direction of all plant community photos
    - ☐ Provide summary of the total number of acres disturbed and a breakdown of the proposed disturbance by plant community
    - ☐ Vegetation maps should include section lines, township range, north arrow, legend, map scale, and other important map information as directed in Reference Document 1 of Guideline 4 "In Situ Recovery".
  - ☐ Threatened or Endangered Plant Species; Noxious Weeds
    - ☐ Survey of affected areas
      - ☐ Photographs of the T&E species included
        - ☐ Original or digital color copies)
        - ☐ Plant communities and a view of the extended reference area
      - ☐ Description of the relative abundance, including an estimate of the extent of noxious weeds
      - ☐ General format for Appendix D-8 (not required)

Appendix D-9 Wildlife

- ☐ Noncoal Chapter 2 Section 1(f) applicant consult with the Wyoming Game and Fish Department and U.S Fish and Wildlife Service prior to submission of a permit application to determine specific additional permitting requirements
  - ☐ Copies of all correspondence to and from agencies should be included
- ☐ Information concerning Sage Grouse per Executive Order No 2011-5

Appendix D-10 Wetlands Habitat

- ☐ Contains copies of the wetland delineation, description of proposed disturbances, and mitigation information
- ☐ U.S. Army Corps of Engineers (USACE) must be contacted for specific instructions on what the Corps require for wetland delineation and mitigation for the mining project
- ☐ USACE Acceptance/Approval if not LQD places a condition on the permit to prohibit construction until approval.

Appendix D-11 Background Radiological Characteristics

- ☐ Include description of the natural gamma of all lands within the impacted areas as required by 35-11-428(a)(i)
- ☐ For uranium and thorium operations adherence to NUREG 1569 Section 2.9.1 Background Radiological Characteristics, Areas of Review for items not listed above
  - ☐ Contain information on the results of measurements of radioactive materials occurring in important species, soil, air, and in surface and ground waters that could be affected by the proposed operations.
  - ☐ Includes description of radionuclides analyzed, sampling locations, sample type, sampling frequency, location and density of monitoring stations and detection limits
  - ☐ Monitoring Program including frequency, sampling methods, and sampling locations and density are in accordance with NRC Regulatory Guide 4.14 Section 1.1 Air monitoring stations are located in a manner consistent with the principal wind directions outlined in Appendix D-4.
  - ☐ Soil sampling is conducted at both the 5-cm depth and 15 cm depth for background decommissioning data.

Appendix D-12 Draft Statement of Basis (Reference Document 7)

- ☐ Geological Extent of the Proposed Aquifer Exemption
  - ☐ Hard Copy Map along with an electronic copy of the proposed aquifer exemption area
    - ☐ Map should be of sufficient scale to clearly show

- ☐ Proposed wellfields
- ☐ Perimeter monitoring wells
- ☐ Proposed aquifer exemption boundary
- ☐ Permit Boundary
- ☐ Any drinking water supply wells within ¼ mile of the proposed aquifer exemption boundary or any drinking water supply well that may be affected by the mining operations

☐ Geological Overview

- ☐ Brief general description of the regional and site geology

☐ Evaluation Criteria (EPA Guidance 34 Attachment 3)

- ☐ Provide name of formation of the aquifer
- ☐ Subsurface depth or elevation of zone
- ☐ Vertical confinement from other underground sources of drinking water
- ☐ Thickness of the proposed exempted aquifer
- ☐ Area of exemption (e.g. acres, square miles, etc)
- ☐ Water quality of the horizon to be exempted
- ☐ Demonstration that the aquifer " does not currently serve as a source of drinking water"
  - ☐ To demonstrate this, the applicant should survey the proposed exempted area to identify any water supply wells which tap the proposed exempted aquifer. The area to be surveyed should cover the exempted zone and a buffer zone outside the exempted area. The buffer zone should extend a minimum of a 1/4 mile from the boundary of the exempted area.

    If no water supply wells would be affected by the exemption, the request should state that a survey was conducted and no water supply wells are located which tap the aquifer to be exempted within the proposed area

☐ Mine Consideration Amenability to Mining

- ☐ Applicants for aquifer exemptions to allow new in-situ mining should demonstrate that the aquifer is expected to contain commercially producible quantities of mineral
  - ☐ Description of the Production Zone
    - ☐ Mineralogy

- ☐ Geochemistry
- ☐ Process Description
  - ☐ Wellfield
  - ☐ Groundwater Monitoring Plan
- ☐ Development Timetable

☐ Proposed Aquifer Exemption Boundary

- ☐ Provide General summary of the process to calculate the proposed aquifer exemption boundary

☐ Copies of the following

- ☐ WQD reclassification to Class V Mineral Commercial determination and the "statement of basis" document
- ☐ Copy of Notification for Public Participation
- ☐ Copy of USEPA aquifer exemption decision

Appendix D-13 Population Distribution Draft Statement of Basis (NUREG 1569 Section 2.3.1)

☐ Uranium and Thorium recovery facilities need to provide information to meet the requirements of Section 2.3.1 of NUREG 1569

- ☐ Provides population data
  - ☐ Maps with cities and towns within 80-km from the approximate center of the of the operations
  - ☐ Map suitable scale is provided centered on the proposed ISR facility marked with concentric circles at 1, 2, 3, 4, 5, 10, 20, 30, 40, 50, 60, 70, and 80 km divided into 22 ½ degree sectors centered on one of the 16 compass points. The distance to the nearest residence is noted for each sector
  - ☐ Descriptions of significant population and visitor statistics of neighboring schools, plants, hospitals, sports facilities, residential areas, parks, and forests within 3.2 km [2 mi] of the proposed in situ leach facility, based on generally accepted sources such as the U.S. Census Bureau, and State and local agencies, are provided, with identification of data sources
  - ☐ Projections are included of population, visitor, and food production data over the expected life of the in situ leach facility (typically tens of years)
  - ☐ Descriptions of the methodology and sources used to develop projections are provided

Part IV Mine (Operations) Plan

Introduction

- ☐ W.S. § 35-11-429 "*Prohibit any significant change in mining technique, method of operation, recovery fluid used, mining and reclamation plans or other activities that would jeopardize reclamation or protection of any waters of the state unless a permit revision has been approved by the director*" **required in discussion of mining methods**
- ☐ First Wellfield data Package. Application includes list of items to be submitted in the wellfield data package.

Site Description and Facilities Layout and Maps

- ☐ Description of Facilities
  - ☐ Provide contour topographic map locating the proposed facilities within the permit area. It should include
    - ☐ Plant buildings, satellite buildings, header houses, impoundments, roads and public highways, utilities and easements, temporary and permanent drainage diversions, stockpiles for topsoil product and waste, chemical storage area, pipelines related to the mining operation, disposal wells, and wellfields.
  - ☐ Description of the Central Processing and Satellite Plants
  - ☐ Description of Other Buildings including description size, use, and type
  - ☐ Description of Fencing and access control
  - ☐ Description of Chemical storage facilities including discussions of the chemicals to be used for the mining process and non-process activities. A discussion of the safety precautions to prevent the chemicals from entering the environment or causing injury to personnel.
- ☐ Roads
  - ☐ Discussion and description of all access roads leading to the permitted area. Include all roads discussed in LQD Chapter 1 Section (ax).
  - ☐ Location and classification of all roads provided on a map
  - ☐ Location and size of all culverts should be shown on a map
  - ☐ Design and construction of any stream crossing should be discussed.
- ☐ Proposed Wellfields
  - ☐ Discuss and show on a map the proposed wellfields of the permitted/licensed area
- ☐ Utility Corridors

- ☐ Discuss and show on a map the location of all existing utility corridors
- ☐ All new power lines built within the permit/licensed area built to deter raptor perching.

☐ Proposed Pipeline Locations

- ☐ Discuss and show on a map the location of all proposed pipelines that will serve the facilities and the mine wellfields
- ☐ Consideration of minimizing footprint should be considered. Consolidating where applicable is preferred

☐ Deep Disposal Well

- ☐ Discussion and location of deep disposal wells
  - ☐ Discussion of disposal well construction
    - ☐ Compliance with WDEQ/WQD Class 1 disposal well standards
    - ☐ General discussion of depth
    - ☐ All surface related disturbances including all of the pipelines servicing the well

☐ Drainage Plan

- ☐ Show on map the drainage of the sire and what steps will be taken to prevent erosion of disturbed area

Topsoil and Subsoil Salvage and Protection

☐ Administrator may authorize topsoil to remain on areas where minor disturbance will occur

☐ Contains discussion regarding topsoil covering

- ☐ Salvage depth, volumes to be salvaged and stockpiled
- ☐ Applicant develops Best management Practices for salvage including temporary seeding/stabilization in accordance with Reference Document 6

☐ Indicate on map the areas which will have topsoil or subsoil salvaged and placed in stockpiles. Could be included in wellfield data package

☐ Includes discussion of the sedimentation control measures and references WQD Storm Water Permit.

☐ Describe procedures to protect topsoil and subsoil. Ways to prevent excessive compaction, degradation, and wind an water erosion.

☐ Include map showing areas where topsoil and subsoil salvage will occur

- ☐ Estimated topsoil and subsoil salvage depth for each area
- ☐ Estimated volume to salvaged from each area

- ☐ Estimated amount to be placed in each stockpile
- ☐ Identify stockpile locations

☐ Describe method to stabilize disturbed areas that will not be immediately reclaimed. LQD strongly encourages seeding these areas

- ☐ Description of the area
- ☐ Temporary seed mix
  - ☐ Species to be planted
  - ☐ Pounds of pure live seed for each species and total for the mix
- ☐ Seed bed preparation
- ☐ Planting methods and equipment used
- ☐ Whether mulch is used

Description of Mining

☐ Production Zone

- ☐ Description of the location with the permit/licensed area and show on a map where underground injection is authorized

☐ Recovery fluid(s) or lixiviant

- ☐ Describe the lixiviant proposed to be used including it chemical makeup and concentration

☐ Description of the mining process

- ☐ Description of chemical reactions that may occur du to recovery fluid injection
  - ☐ If process is to be held confidential statement in accordance with 35-11-1101(a) is required
- ☐ Major chemical reactions or physical processes anticipated at each step in the process should be described
  - ☐ Composition and average and maximum volume of fluid to be injected during operations
  - ☐ Special processes and reactions such as those involved in ion exchange and reverse osmosis,
  - ☐ Anticipated volume and composition of waste waters or material generated
- ☐ Assessment of impacts to water resources on adjacent lands and possible mitigation
  - ☐ Groundwater assessment including 5 foot drawdown map for each potentially affected aquifer. Discuss and consider potential impacts to

wells within the 5 foot drawdown contour

- ☐ For surface water assessment the operator should include impacts to specific resources such as ponds, wetlands etc.
- ☐ Include consumptive use amounts
- ☐ Potential impacts to offsite groundwater
- ☐ Step to mitigate potential impacts

☐ Development and delineation Drilling

- ☐ Describe the ongoing development and delineation drilling within the permitted/licensed area
  - ☐ General discussion of all drill holes within the permit/license area. Including geotech holes and development drilling.
  - ☐ Discuss practices, procedures, and techniques to abandon holes
  - ☐ Discuss reporting commitments

Include discussion of Wellfield Design and Construction

☐ Wellfield Design

- ☐ Pattern layout and dimensions
- ☐ Monitoring well network
  - ☐ Potential impacted aquifer monitoring
  - ☐ Spacing
- ☐ Site specific method for locating monitor wells
  - ☐ Gradient considerations
  - ☐ Dispersivity of recovery fluids
  - ☐ Initial excursion recovery measures employed
  - ☐ The normal mining operational flare (the lateral and vertical extent of affected area under normal operating conditions),
  - ☐ Model the distance an excursion is likely to travel down gradient in 60 days based on injections continuing for 2 weeks and the production well is turned off, and
  - ☐ The recoverability within the allowable regulatory time frame, as specified in Chapter 11 of the Land Quality NonCoal Rules and Regulations, should be employed,
  - ☐ Monitor well locat7;ions and the possible lateral extent of an excursion are to be located using the groundwater flow model MODFLOW, or

other technically justified method with prior approval of LQD.

- ☐ Perimeter monitoring wells in hydraulic communication with the production zone
- ☐ Consideration of geologic features, including fault zones
- ☐ Topographic map identifying monitoring area and wellfield area, extent of the ore zone, faults, and other hydrogeological boundaries should be identified
- ☐ Headerhouse design
  - ☐ Description
  - ☐ Discussion
  - ☐ Typical plans,
  - ☐ Manifolds
  - ☐ Trunklines
  - ☐ Other pipelines
  - ☐ Fluid control methods
  - ☐ Spill detection
  - ☐ Alarm systems
  - ☐ Containment features
- ☐ Well Installation and Completion
  - ☐ Typical completion details for all monitoring wells
  - ☐ Typical completion details for injection and production wells
    - ☐ Casing size
    - ☐ Casing type
    - ☐ Wellbore diameter
    - ☐ Centralizers
    - ☐ Screens
    - ☐ Gravel pack
    - ☐ Annular sealant
    - ☐ Displacement technique
    - ☐ Sealant setting time
    - ☐ Under reaming
- ☐ Well development
  - ☐ Procedures used to develop wells

- ☐ Describe monitoring types performed

- ☐ MIT Details
  - ☐ Provide a schedule and description of the procedures of MIT tests
  - ☐ MIT plan must include a commitment to quarterly reporting of MIT's to LQD

- ☐ Well Corrective Action Plan
  - ☐ Includes plan for wells that fail the MIT or improperly sealed, completed, or abandoned.
    - ☐ Time schedule
    - ☐ Modifications necessary

- ☐ Notice of Completion of Construction
  - ☐ LQD R&R Chapter 11 requires an operator to submit a notice of completion of construction in the quarterly monitoring reports. Reference Document 8, Well Installation Completion, provides additional detail concerning the reporting procedures.
  - ☐ Provide a discussion and list the information that will be provided to the administrator.
  - ☐ The notice shall be signed by a company representative and include the MIT results.

- ☐ For uranium or thorium recovery facilities, any additional information requested in NUREG 1569 Section 3.1.1 and 3.2.1 shall be included.
  - ☐ NUREG 1569 Section 3.1.1 Areas of Review
    - ☐ A description of the mineralized zone(s) and the feasibility of processing the defined well field areas
    - ☐ Well construction techniques and integrity testing procedures to ensure well installations will not result in hydraulic communication between production zones and adjacent non-mineralized aquifers
    - ☐ A process description including injection/production rates and pressures; plant material balances and flow rates; lixiviant makeup; recovery efficiency; and gaseous, liquid, and solid wastes and effluents that will be generated
    - ☐ Proposed operating plans and schedules that include timetables and sequences for well field operation, surface reclamation, and ground-water restoration
    - ☐ Review of techniques for ensuring that a proliferation of small waste disposal sites is avoided.
    - ☐ Maps of the facility layout, descriptions of the processes and

materials balances, and chemical recycling

- ☐ NUREG 1569 Section 3.2.1 Areas of Review
  - ☐ Physical descriptions and reported operating characteristics for major equipment items of the processing cycle
    - ☐ Descriptions of the proposed process information and controls as well as radiation sampling and monitoring equipment
    - ☐ A diagram that indicates the plant layout and locations where dusts, fumes, gases could be generated as well as locations of all ventilation, filtration, confinement, and dust collection systems, radiation safety and radiation monitoring devices.
    - ☐ A list with specifications of all of the radioactive and hazardous materials in the facility
    - ☐ Hazards associated with the use, storage, quantity, and operating parameters of the use of these materials
    - ☐ Safety features to mitigate the hazards presented by these materials

Wellfield Package Information

- ☐ Reference Document 9
  - ☐ Maps
    - ☐ Proposed locations of all wells
    - ☐ Soil salvage and protection
  - ☐ Hydraulic Connection and Confinement/Control
    - ☐ Demonstration of lack of hydraulic connection and confinement between the production zone and the vertically adjacent aquifers
    - ☐ Extent of hydraulic connection between the production zone and horizontal monitor well ring
    - ☐ Cross sections, isopachs of all potentially affected aquifers and confining units
    - ☐ Potentiometric surface maps
    - ☐ Structural contour maps
    - ☐ The maps must show the production zone sand, overlying and underlying aquitard units, and overlying and underlying aquifers. Each proposed production zone sand should be identified separately. The slotted or screened intervals of each perimeter and production zone well will need to be keyed to the specific production zone sand.
  - ☐ Wellfield Specific Pump Tests

- ☐ Hydraulic properties of production zones
- ☐ During the planning phase, with LQD participation, the anticipated pump test location, pumping rate, and test duration should be determined. The duration of the pump test should be sufficient to adequately stress the overlying and underlying aquifers.
- ☐ Results of aquifer testing which demonstrates that the perimeter zone monitor wells are in communication with the production zone wells.
- ☐ Geologic and hydrologic data from the overlying and underlying aquifers demonstrating the extent of hydraulic communication with the production zone aquifer.

☐ Potentiometric Surface Maps

- ☐ Production zones to be mined
- ☐ Overlying and underlying aquifer(s) as applicable

☐ Baseline Water Quality

- ☐ Overlying aquifers
- ☐ Underlying aquifers
- ☐ Horizontal monitor well ring
- ☐ Production zone

☐ Proposed Target Restoration Values

☐ The Proposed Monitor Well Upper Control Limits

☐ Aquifer Reclassification and Exemption

☐ Details of Location, construction and Completion Details for Monitoring Wells

☐ Summary Tables showing location, construction and completion details for Monitoring Wells

☐ Mechanical Integrity Test (MIT) Records for Class III Injection Wells

☐ Abandonment Records

- ☐ Include the search for, and handling of exploration drill holes located within the wellfield perimeter monitoring well ring.

☐ The applicant should acknowledge if the testing plan to obtain the necessary hydrological information changes from the procedures previously approved by LQD, the new plan will be required to be submitted to LQD for approval.

☐ If the wellfield package is for a wellfield that was not previously identified in the permit, a revision to the permit with public notice will be required. A previously unidentified wellfield will also most likely result a change in the aquifer reclassification and aquifer exemption.

Wellfield Operation Control and Monitoring of Wellfields

- ☐ Injection Rate and Pressure description
  - ☐ Include the fracture and fluid pressure of each production zone
  - ☐ Injection rate, with the average and maximum daily rates and the volume of fluid to be injected;
  - ☐ Typical discussion of injection pressures, with average and maximum injection pressures, as required by LQD Chapter 11. Include a discussion or comparison to the formation pressure and steps to be taken to prevent fractures in the confining zone;
- ☐ Operational Control of Injection Fluids
  - ☐ Procedures to assure that the installation of recovery, injection, and monitor wells will not result in hydraulic communication between the production zone and the overlying or underlying stratigraphic horizons.
  - ☐ Proposed injection procedure
  - ☐ The applicant needs to describe how the pressures and flow rates will be monitored. Electronic monitoring of pressures and flow rates at both the headerhouse and at the well head are suggested. The monitoring devices should be connected to the central control facility with alarms to alert operators of problems and allow automatic or quick response by wellfield operators.
  - ☐ Describe the procedures utilized to verify that the injection and recovery wells are in communication with monitor wells completed in the production zone and employed for the purposes of detecting excursions.
- ☐ Wellfield Monitoring
  - ☐ Proposed UCL Calculation Method
    - ☐ Reference Document 4
      - ☐ Significant departures from a normal distribution,
      - ☐ Serial dependence, and
      - ☐ Temporal trends.
    - ☐ Selection of UCL Parameters and Calculations
    - ☐ Selection of UCL Parameters for Uranium
      - ☐ Statistical Assumptions
      - ☐ Screening the UCL Parameter Data Base for Errors and Outlier Populations
      - ☐ Calculation of UCL Values

- ☐ Trend Wells
- ☐ Frequency of UCL Monitoring
  - ☐ Twice monthly, at least 10 days apart
- ☐ Parameters
  - ☐ For ISL Uranium
    - ☐ TDS/Conductivity
    - ☐ Chloride
    - ☐ Sulfate
    - ☐ Bicarbonate/Total Alkalinity
    - ☐ Sodium
  - ☐ Water Level Monitoring

- ☐ Water Balance
  - ☐ Production only
  - ☐ Concurrent production and restoration
  - ☐ Restoration only
  - ☐ Plant water
  - ☐ Water from Pump tests
  - ☐ Design Throughput and Production
    - ☐ Description of the design capacity of the facilities
      - ☐ Process stream
      - ☐ Waste stream
      - ☐ Makeup water
      - ☐ Source of water
- ☐ Definition of Completion of Mining
  - ☐ Discussion of criteria used to determine when mining is complete

Excursion Response and Additional Monitoring

- ☐ Detection, control, and cleanup procedures
  - ☐ Considers both horizontal and vertical excursions
  - ☐ Monitoring network description
  - ☐ Parameters

- ☐ Monitoring excursions
  - ☐ If UCLs are exceeded, the sampling and analysis should be repeated within 24 hours of receipt of the data
    - ☐ If second sampling event indicate >2 UCLs exceeded, excursion is confirmed
    - ☐ If second sample does not indicate excursion, a third sample should be collected within 24 hrs of receipt of 2nd sample results
    - ☐ If nether 2nd or 3rd sample shows excursion, then 1st sample will be considered in error
  - ☐ If results of the confirmatory sampling event are not received within 30 days, the excursion is considered confirmed
- ☐ Corrective action plan
  - ☐ The applicant must describe the actions to be implemented to correct and control an excursion event.
    - ☐ Horizontal and vertical excursions
  - ☐ Samples collected and analyzed weekly until excursion is controlled
- ☐ Reporting Procedures
    - ☐ Verbally within 24 hours
    - ☐ Written within 5 days
- ☐ Excursion Control Actions
  - ☐ The operator should implement the recovery plan and continue monitoring. Samples will be collected and analyzed on a weekly basis until the excursion is controlled. The excursion is considered controlled when it can be demonstrated through water quality and groundwater gradient or, if applicable, pressure measurements, that recovery fluid in unauthorized areas is declining. It is important to realize there is a difference between “controlling” an excursion and “recovery” of excursion fluid.
  - ☐ If the excursion is not controlled within 30 days after confirmation of the excursion, a suite of samples should be analyzed for the parameters listed in LQD R&R Chapter 11. At the time UCLs are no longer exceeded, a suite of samples should again be analyzed for those parameters.
  - ☐ In this section, the operator should include a statement recognizing that if an excursion is not controlled within 60 days after confirmation of the excursion, the administrator (after consultation with the director), may terminate, revoke, or modify the mining operation (see W.S. § 35-11-429).
  - ☐ If the excursion is controlled but the fluid is not recovered within 60 days after confirmation of the excursion, the operator will submit a plan and compliance schedule to WDEQ within 90 days after confirmation of the excursion. The plan and schedule must meet the requirements of LQD R&R Chapter 11. Slow

recovery of excursion fluid may result in an increase in the reclamation bond.

- ☐ For uranium or thorium recovery facilities, any information required in NUREG 1569 Section 3.3.1 not already covered above, shall be included in the application.
  - ☐ NUREG 1569 Section 3.3.1 Areas of Review
    - ☐ Descriptions of the proposed process instrumentation and controls and radiation safety sampling and monitoring instrumentation
      - ☐ Minimum specifications
      - ☐ Operating characteristics
    - ☐ Well field process control equipment
      - ☐ Monitoring injection pressures
      - ☐ Injection rates
      - ☐ Production rates
    - ☐ Safety related process monitoring and control equipment for the entire facility and auxiliary buildings and impoundments

Wellfield Maintenance, Repair and Abandonment

- ☐ Provide a maintenance plan to ensure:
  - ☐ A commitment to protect all monitoring wells to the extent possible until their removal and reclamation (see also Reference Document 9, Wellfield Package).
  - ☐ Wells are sufficiently covered to protect against entrance of undesirable material into the well;
  - ☐ The wells are marked and can be clearly seen; and
  - ☐ The area surrounding each well is kept clear of brush or debris; and
  - ☐ Monitoring equipment is appropriately serviced and maintained so the monitoring requirements of Chapter 11 can be met.
  - ☐ MIT methods and schedule
  - ☐ Provide corrective action plan for MIT failure, and improperly sealed, completed and abandoned wells
- ☐ Well Plugging and Abandonment
  - ☐ Plans for well repair, plugging and conversion.
  - ☐ Chapter 11, Section 70 of the Water Quality Division (WQD) Rules and Regulations describes acceptable well abandonment procedures.

Wastewater Production and Disposal Capacity

- ☐ Type, (i.e., plant waste streams - where produced, and quantity)
- ☐ Disposal locations and capacity and any treatment technology
  - ☐ Deep disposal wells
  - ☐ Evaporation ponds
  - ☐ Land application of wastewater
  - ☐ Surface Discharge
  - ☐ Other Methods approved by the Administrator

Lined Pond Inspections, Monitoring, Leak Detection, and Control

- ☐ Procedures for inspection and monitoring of lined ponds and leak detection systems
- ☐ Schedule for inspection and monitoring of lined ponds and leak detection systems
- ☐ Procedures for inspection and monitoring of wellfield and plant releases
- ☐ Schedule for inspection and monitoring of wellfield and plant releases
- ☐ Potential and proposed actions and their leak detection systems

Wellfield and Plant Releases

- ☐ The potential for wellfield and plant releases should be discussed along with an indication of likely contaminants involved. Spill control and cleanup procedures should be outlined. Wellfield and Plant Release Potential – At a minimum, address the potential at the following areas:
  - ☐ wellfields
  - ☐ pipelines
  - ☐ lined ponds
  - ☐ deep disposal wells
  - ☐ Wellfield and Plant Release Prevention Plan
  - ☐ Proposed Wellfield and Plant Release Response
  - ☐ Reference Clean Up Standards – such as DEQ VRP, NRC and EPA.
  - ☐ Wellfield and Plant Release Reporting

Other Wastes and Disposal

- ☐ Water from pump tests
  - ☐ WYPDES Permit with procedures and mechanisms already in place

- ☐ WQD UIC Permit for pump test water to the subsurface if applicable
- ☐ Documentation for land surface application as necessary

☐ Other liquid wastes

- ☐ Hazardous wastes
- ☐ Domestic liquid wastes

☐ Solid wastes

- ☐ Describe the various types of solid wastes to be generated,
- ☐ The amount of each type.
- ☐ Disposal method

☐ Effluent Control Systems

- ☐ For uranium or thorium recovery facilities, any information required in NUREG 1569 Section 4.1.1 Gaseous and Airborne Particulates shall be included in the application.
  - ☐ NUREG 1569 Section 4.1.1 Areas of Review
    - ☐ Proposed ventilation, filtration and confinement systems to control the release of radioactive material to the atmosphere
    - ☐ Review analyses of equipment as designed and operated to prevent radiation exposures and to limit exposures and releases to as low as is reasonably achievable
    - ☐ Review of the physical description of discharge stacks, types and estimated composition and flow rates of atmospheric effluents, and proposed methods for controlling such releases
    - ☐ For uranium or thorium recovery facilities, any information required in NUREG 1569 Section 4.2.1 Liquids and Solids, not already required above, shall be included in the application.
  - ☐ NUREG 1569 Section 4.2.1 Areas of Review
    - ☐ Information related to surface impoundment design, monitoring programs, freeboard requirements, and leak reporting procedures
    - ☐ Liquid effluent disposal plans
    - ☐ Contingency plans for dealing with leaks and spills
    - ☐ Contaminated solid waste generation and disposal plans
    - ☐ Non-contaminated solid waste generation and disposal plans

Subsidence

☐ Estimate of amount of subsidence

☐ A monitoring plan should be outlined

- ☐ Costs should be included in the bond estimation
- ☐ If subsidence is not a problem for this type of mining, this must be indicated

Wildlife Monitoring and Mitigation Plan

- ☐ Identification of potential impacts to wildlife
- ☐ Methods to minimize these impacts should be developed and described
  - ☐ Big game
  - ☐ Sage grouse
  - ☐ Raptors
  - ☐ Migratory birds
  - ☐ Threatened and endangered species

Mining Schedule

- ☐ A list of the proposed wellfields;
- ☐ A map(s) which shows the proposed sequence for mining of the wellfields;
- ☐ A proposed time schedule for construction, mining, and restoration each wellfield; and
- ☐ The capacity of the water/waste water treatment systems and correlation of the capacity with the mining and restoration schedules.

Summary and Table of Required Monitoring and Reporting

- ☐ Table of reporting requirements
  - ☐ Type of Report
  - ☐ Frequency
  - ☐ Content Summary

Operations

- ☐ For uranium or thorium recovery facilities, any information required in NUREG 1569 Sections 5.1.1, 5.2.1, 5.3.1, 5.4.1, 5.5.1, 5.6.1, 5.7.1.1, 5.7.2.1, 5.7.3.1, 5.7.4.1, 5.7.5.1, 5.7.6.1, 5.7.7.1 and 5.7.9.1 shall be included in the application. This does not include NUREG 1569 Section 5.7
  - ☐ NUREG 1569 Section 5.1.1 Corporate Organization and Administrative Procedures
    - ☐ Adequate description of corporate organization
    - ☐ Clearly defines management responsibility and authority
    - ☐ Radiation Officer has responsibility and authority in accordance with Regulatory Guide 8.31 Section 1.2

- ☐ Organizational structure shows integration among groups that support the operation. New facilities show integration between plant construction and plant management
- ☐ To the extent practicable administrative procedures conform with Regulatory guide 8.2 and Regulatory Guide 4.15
- ☐ Sufficient independence is available to the plant supervisor, radiation safety office such that significant issues can be raised to senior management

☐ NUREG 1569 Section 5.2.1 Management Control Program

- ☐ Management Control program is sufficient to assure all proposed activities that affect health, safety, and the environment will be conducted by standard operating procedure
- ☐ Applicant provides process that will be used to identify and prepare operating procedures for routine work
- ☐ Applicant provides process on development of procedures covering all aspects of radiation safety, and routine maintenance activities
- ☐ Presents methods for reviewing and approval of non-routine work or maintenance activity by the radiation safety staff. Includes description of the Radiation Work Permit (RWP) process
  - ☐ Commitment to post areas exempted from the requirements of 20 C.F.R 1902(e) with " ANY AREA WITHIN THIS FACILITY MAY CONTAIN RADIOACTIVE MATERIAL"

☐ NUREG 1569 Section 5.3.1 Management Audit and Inspection Program

- ☐ Proposed management audit and inspection
- ☐ ALARA Program
  - ☐ Frequencies, types, and scopes of review, inspections, action levels
  - ☐ Corrective action measures
  - ☐ Responsibilities of each participant

☐ NUREG 1569 Section 5.4.1 Qualifications for Personnel Conducting the Radiation Safety Program

- ☐ Minimum qualifications and experience levels required for personnel who will be assigned the responsibility for developing, conducting, and administering the radiation safety program
- ☐ Qualifications of people specifically proposed for these positions

☐ NUREG 1569 Section 5.5.1 Radiation Safety Training

- ☐ Content of the initial training
- ☐ Testing
- ☐ On the job training
- ☐ Extent and frequency of the retraining
- ☐ Written radiation safety instructions provided to employees
  - ☐ Personal hygiene
  - ☐ Contamination surveying
  - ☐ Personal monitoring device requirements
  - ☐ Respirators
  - ☐ House keeping
  - ☐ Spill cleanups
  - ☐ Emergency Actions

☐ NUREG 1569 Section 5.6.1 Security

- ☐ Security measures to prevent unauthorized access to the controlled area

☐ NUREG 1569 Section 5.7.1.1 Effluent Control Techniques

- ☐ Description of effluent controls
  - ☐ Ventilation
  - ☐ Confinement
  - ☐ Filtration
- ☐ Major airborne effluents
  - ☐ Particulate
  - ☐ Radon gas
- ☐ Common liquid effluent sources
  - ☐ Facility design for containment of contamination from spills and accidents
- ☐ Impoundments
  - ☐ Engineering design review to ensure proper containment performance
  - ☐ Leak detection and monitoring systems

☐ NUREG 1569 Section 5.7.2.1 External Radiation Exposure Monitoring Program

- ☐ Survey methods
- ☐ Instrumentation
- ☐ Equipment
- ☐ Action levels
- ☐ Locations of surveys
- ☐ Management audits
- ☐ Corrective action requirements
- ☐ Personnel exposure monitoring
- ☐ Sensitivity and range of devices used
- ☐ Calibration frequency and methods

☐ NUREG 1569 Section 5.7.3.1 Airborne Radiation Monitoring Program

- ☐ Monitoring program
  - ☐ Routine, non-routine operations, maintenance, and cleanup
- ☐ Monitoring locations
- ☐ Sampling frequency
- ☐ Analytical procedures and sensitivity
  - ☐ Action levels, audits, and corrective action requirements

☐ NUREG 1569 Section 5.7.4.1 Exposure Calculations

- ☐ Methodology to calculate the exposures to radioactive materials

☐ NUREG 1569 Section 5.7.5.1 Bioassay Program

  - ☐ Description of the bioassay program
  - ☐ How bioassay results will be used to confirm results derived from the airborne radiation monitoring program
  - ☐ Exposure calculations

☐ NUREG 1569 Section 5.7.6.1 Contamination Control Program

- ☐ Review the contamination control program
- ☐ Level of contamination monitored by the program
- ☐ Survey methods
- ☐ Housekeeping and cleanup requirements
- ☐ Specifications in process areas to control contamination
- ☐ Frequency of surveys of clean areas

- ☐ Survey methods
- ☐ Minimum sensitivity
- ☐ Range
- ☐ Calibration

- ☐ NUREG 1569 Section 5.7.7.1 Airborne Effluent and Environmental Monitoring
  - ☐ Airborne effluent and environmental monitoring program
  - ☐ Technical bases for determining the environmental concentrations
  - ☐ Types and sensitivity of analysis
    - ☐ Frequency of analysis
    - ☐ Action levels
    - ☐ Corrective action requirements
    - ☐ Minimum number and criteria for locating effluent and environmental monitoring stations
    - ☐ Commitments for semiannual effluent and environmental monitoring reporting
    - ☐ Topographic map of the site and surrounding area showing the locations of the environmental monitoring locations
- ☐ NUREG 1569 Section 5.7.9.1 Quality Assurance
    - ☐ QAPP for all monitoring programs

Radiological Environmental Effluents

- ☐ For uranium or thorium recovery facilities, any information required in NUREG 1569 Sections 7.3.1.1.1, 7.3.1.2.1, 7.3.1.3.1, 7.3.1.4.1 and 7.3.1.5.1 shall be included in the application.
  - ☐ NUREG 1569 Section 7.3.1.1.1 Exposures from Water Pathways
    - ☐ Estimates of annual average concentrations of radionuclides in receiving water at the site boundary and locations where water is consumed or used by humans or where it is inhabited by biota of significance to human food chains
    - ☐ Data presented in support of these estimates
    - ☐ Details of models and assumptions used in supporting calculations of the total annual whole body and organ doses to the individuals in the off0site population from all receiving water exposure pathways as well as any dilution factors in these calculations

- ☐ Estimates of concentration in the food chains and associated bioaccumulation factors
- ☐ Calculations of internal and external doses
- ☐ If no waterborne effluents from the facility, these analyses are not needed

- ☐ NUREG 1569 Section 7.3.1.2.1 Exposures from Air Pathways
  - ☐ Estimated release rates of airborne radioactivity from facility operations and the atmospheric dispersal of such radioactivity considering applicable meteorological data
  - ☐ Estimates of annual total body and organ doses to individuals including
    - ☐ At the point of maximum ground level concentration offsite;
    - ☐ At the site boundary in the direction of the prevailing wind;
    - ☐ At the site boundary nearest the emission source;
    - ☐ At the nearest residence in the direction of the prevailing wind
  - ☐ Individual dose to the MEI to verify compliance with 10 CFR 20.1301
  - ☐ Data, models, calculations, and assumptions should be reviewed
  - ☐ Source term
  - ☐ Pathway components
- ☐ NUREG 1569 Section 7.3.1.3.1 Exposures from External Radiation
  - ☐ Maximum annual external doses received by an individual from direct radiation at the nearest site boundary
  - ☐ Data, models, calculation and assumptions should be reviewed
- ☐ NUREG 1569 Section 7.3.1.4.1 Total Human Exposures
  - ☐ Maximum annual dose that could be received by all pathways to an individual at the site boundary and a the nearest residence
  - ☐ Data, models, calculations, and assumptions should be reviewed
- ☐ NUREG 1569 Section 7.3.1.5.1 Exposures to Flora and Fauna
  - ☐ Estimate of maximum radionuclide concentrations that may be present in local flora and local and migratory fauna
  - ☐ Bioaccumulation factors, models, calculations, and assumptions should be reviewed

Effects of Accidents

- ☐ For uranium or thorium recovery facilities, any information required in NUREG 1569 Section 7.5.1 shall be included in the application.

- ☐ NUREG 1569 Section 7.5.1 Effects of Accidents
  - ☐ Accident response procedures
    - ☐ Personnel training in their use
  - ☐ Radiological
  - ☐ Non-radiological
  - ☐ Transportation
  - ☐ SOP and Accident procedures
  - ☐ Training programs

Part IV. RECLAMATION/RESTORATION PLAN

GENERAL RECLAMATION SCHEDULE

- ☐ Schedule is broken down by different types of disturbances and different phases of reclamation work for each wellfield proposed in this application
  - ☐ Considers instances where mining a wellfield is completed but restoration cannot be initiated because ongoing mining activities in an adjacent wellfield
  - ☐ Considers where in the above example a restoration in a portion of a wellfield may be initiated
  - ☐ Instances where mining in a portion of a large or long, linear wellfield may be completed and the rest of the wellfield is still in production but due the size or distance between the producing and non-producing portions of the wellfield restoration may begin

GROUNDWATER RESTORATION

- ☐ Introduction
  - ☐ Aquifer restoration activities
  - ☐ Procedures for the above
  - ☐ Chemistry
  - ☐ Facilities
  - ☐ Equipment
  - ☐ Expected final water quality should be summarized
  - ☐ Timetables for restoration activities should be discussed
- ☐ Statement of Best Practicable Technology (BPT's)
  - ☐ Discussion of BPT's
  - ☐ Changes resulting in a new BPT

- ☐ Research and development activities conducted at the site
- ☐ Comparison to other ISL sites
  - ☐ Aquifer restoration methodologies described in B.3 of Guideline 4 should be compared to other ISL sites for which groundwater has been restored
    - ☐ Geology
    - ☐ Mineralogy
    - ☐ Premining water quality
    - ☐ Geochemistry (including major ions)
    - ☐ Lixiviant
    - ☐ Anticipated postmine/prerestoration water quality
    - ☐ Reductants used
    - ☐ Restoration methods
    - ☐ Pore volumes for each process
    - ☐ Length of time for wellfield restoration
    - ☐ Restored groundwater quality
  - ☐ Target Restoration Values (TRVs)
    - ☐ How the values are established
    - ☐ Proposed TRVs for each wellfield package
  - ☐ Methodology/Process Description and Chemistry
    - ☐ Volume
    - ☐ Flow rates
    - ☐ Composition of water generated during restoration
    - ☐ Water quality monitoring
    - ☐ Full suite of analytes – See Reference Document 10 – Premining Water Quality and Quantity Sampling
    - ☐ Water level monitoring
  - ☐ Monitor Network During Groundwater Restoration
    - ☐ Specific monitoring plan for:
      - ☐ Active phases
      - ☐ Stability phases
  - ☐ Restoration Volumes and Flow Rates

- ☐ Pore Volume Displacement Estimate
- ☐ Restoration Pore Volume Displacements
- ☐ Restoration Flow Rates
- ☐ Restoration Fluid Disposal

☐ Stability Plan

- ☐ Well Selection
  - ☐ Wells initially selected and listed in the reclamation plan will be used to determine restoration success
  - ☐ Both injection and production wells should be selected.'
- ☐ Stability Period
  - ☐ When the restoration goal is achieved, restoration should be discontinued and a stability period of 12 months will begin
  - ☐ The restoration sampling wells should be monitored during the stability period generally - every two months or quarterly basis for a full suite of parameters in Reference Document 10, Premining Water Quality and Quantity Sampling, except those shown to be unaffected by mining and restoration processes.
- ☐ Evaluation of Stability Data
  - ☐ Basis of wellfield averages
  - ☐ Wells of different wellfield classes should never be averaged together
  - ☐ The data should be examined on a parameter by parameter basis.
  - ☐ The data should be examined over time (the twelve month period) to identify any trends - techniques such as scatter plots, trend, regression analysis and standard statistics should be used. A determination of aquifer stability should be made upon the "trends" in the data; i.e., an acceptably stable aquifer should not exhibit rapid upward or downward trends or be oscillating back and forth over a wide range of values beyond baseline variability.
  - ☐ The data should be evaluated against baseline quality and variability to determine if the restoration goal is met the primary restoration goal is always baseline. The secondary goal is to restore the water within class of use. The secondary goal of restoration within class of use is

applicable for "problem" parameters if and only if BPT has been demonstrated. Additionally for uranium and thorium operations review criterion in 10 CFR 40 Appendix A 5(b)5.

- ☐ Statistical methods should be used to compare the restored aquifer data with the baseline, e.g. analysis of variance and t-test. It is important to address all of the assumptions inherent in the particular statistical method chosen. The restoration success will be evaluated on the basis of statistically equivalent populations between baseline and post-restoration data. Normally the same wells are used premining and post restoration.
- ☐ Potentiometric surface maps should be developed to reflect aquifer conditions at the end of the stability monitoring period. Following a decision that the aquifer geochemistry is relatively stable, data should be evaluated on a parameter by parameter basis to determine if:
  - ☐ parameters have met baseline.
  - ☐ parameters are above baseline but below class of use.
  - ☐ parameters are above class of use.

- ☐ Demonstration of BPT
  - ☐ Type of Technology
  - ☐ Application of Technology
    - ☐ Number of gallons and/or pore volumes pumped
    - ☐ Number of gallons reinjected
    - ☐ Quality of water produced vs. reinjected
    - ☐ Future Wastewater disposal capacity
    - ☐ Document that active restoration was discontinued at the appropriate time. LQD and the operator should agree when restoration should be discontinued.
    - ☐ Proper maintenance and operation of equipment
  - ☐ Economics
    - ☐ Consideration given to the cost for further reduction in parameters
  - ☐ Demonstration of groundwater restoration success

- ☐ How the operator will demonstrate restoration success
- ☐ Evaluation of BPT
- ☐ Parameter by parameter water quality evaluation
- ☐ Potential impact on adjacent groundwater
- ☐ Modeling if necessary
  - ☐ If groundwater is restored to its premining condition on a parameter by parameter basis, no further evaluation is required

ASSESSMENT OF IMPACTS TO WATER RESOURCES

- ☐ 5-foot drawdown maps for all affected aquifers compared to the premining projections. If the drawdown is greater than projected, specific private wells located within the 5-foot contour must be evaluated and determined if additional mitigation is warranted.
- ☐ Assessment of impacts to specific resources such as ponds, wetlands, etc. and compared to the premining projections to determine if additional mitigation is warranted. Refer to the Surface Water reference document for additional guidance regarding surface water.

Decontamination and Decommissioning

- ☐ Disposal of buildings and facilities. The plan should include procedures for disposing of buildings and other facilities.
- ☐ Toxic materials - The procedures for permanently disposing of any toxic or acid forming materials should be provided.
- ☐ Lined pond decommissioning.
- ☐ Wellfield decommissioning.
- ☐ Soil decontamination.
- ☐ For uranium or thorium recovery facilities, any information required in NUREG 1569 Section 6.2.1 Reclaiming Disturbed Lands, not already required above, shall be included in the application.
  - ☐ NUREG 1569 Section 6.2.1 Reclaiming Disturbed Lands
    - ☐ Maps and data that document post-operational condition
    - ☐ Plans for:
      - ☐ Reclaiming temporary diversion ditches and impoundments
      - ☐ Reestablishing surface drainage patterns disrupted by the

proposed activities

- ☐ Returning the ground surface and structures for post-operational use

- ☐ Pre-remediation radiological survey program
  - ☐ Measurement techniques and sampling procedures
  - ☐ Approved decommissioning radiation protection program prior to the start of reclamation and cleanup work
  - ☐ Acceptable agreement is in place for off-site disposal of 11e.(2) byproduct material

- ☐ For uranium or thorium recovery facilities, any information required in NUREG 1569 Section 6.3.1 Removal and Disposal of Structures, Waste Materials, & Equipment, not already required above, shall be included in the application.
  - ☐ NUREG 1569 Section 6.3.1 Removal and Disposal of Structures, Waste Materials, & Equipment
    - ☐ Methodologies for removal and disposal of
      - ☐ Contaminated structures
      - ☐ Equipment
    - ☐ Techniques for
      - ☐ Managing toxic wastes
      - ☐ Managing radioactive wastes
    - ☐ Approaches for identifying radiological hazards prior to dismantlement of structures and equipment
      - ☐ Detection and cleanup of these hazards
    - ☐ Future use of materials
      - ☐ Disposed of in a licensed facility
        - ☐ Provisions made for removal and disposal of byproduct material to an existing uranium mill or licensed disposal site
        - ☐ Meets contamination levels for unrestricted use
        - ☐ Designated for re-use at another ISL facility

- ☐ For uranium or thorium recovery facilities, any information required in NUREG 1569 Section 6.4.1 Methodologies for Conducting Post-Reclamation and Decommissioning Radiological Surveys, not already required above, shall be included in the application.
  - ☐ NUREG 1569 Section 6.4.1 Methodologies for Conducting Post-Reclamation and Decommissioning Radiological Surveys

- ☐ Methodologies for conducting post-reclamation and decommissioning radiological surveys
- ☐ Radiological verification survey program
- ☐ Measurement techniques and sampling procedures proposed

Surface Reclamation

- ☐ Post-mining land use. The proposed post-mining land use should be specified along with a discussion of the actions the operator will take to achieve that land use.
- ☐ Process facilities and road reclamation. Describe the steps and how the facilities and roads will be prepared for reclamation.
- ☐ Contouring and final topography including drainage restoration. The plan should demonstrate that surface affected lands will blend with adjacent topography and land uses and any drainages will be re-established.
- ☐ Wildlife habitat. Where wildlife habitat will be part of the post-mine land use, LQD regulations require development of a plan to restore this use. All habitat reclamation procedures should be described in the reclamation plan of the permit application.
- ☐ Surface preparation. The plan should indicate any surface preparation to be undertaken before topsoiling.
- ☐ Topsoil application, estimated volumes and replacement depths
- ☐ Topsoil replacement methods and schedules should be included. Minimum depth of topsoil replacement should be specified. The addition of soil amendments that are planned should be indicated.
- ☐ Revegetation practices. The plan for revegetation should include species to be seeded, rate of seeding, and method and time of seeding. If cover crops, mulch, fertilizer, or irrigation will be used, this should be discussed in detail including methods and timing, rates, locations, and water quality.
    - ☐ Seed mixtures
    - ☐ Include a table of the permanent seed mix listing the species by scientific and common name and the number of pounds of pure live seeds (PLS). LQD strongly recommends using native species. The seed mix will generally contain cool and warm season grasses and forbs. The total PLS for the seed mix should be no more than 12 to 14 pounds but the LQD district office should be consulted for composition and amount.
    - ☐ Reseeding methods
    - ☐ Include any special areas such as sage grouse habitat that require special measures or seed mixes.
    - ☐ Protection of Newly Seeded Areas
    - ☐ The plan should include measures and specifications to be used for

protecting newly revegetated areas from grazing animals. A site maintenance plan which includes contingencies to correct weed establishment or erosional instability should be included.

- ☐ Erosion control practices during and after reclamation
  - ☐ Discuss and show the design and location of any erosion control practices.
- ☐ Weed control
  - ☐ The plan should include monitoring and when and what steps will be taken to control invasive weeds on the reclaimed areas. The applicant should be aware that each county has their own list of noxious weeds which may be different from the state requirements.
- ☐ Evaluation of surface reclamation success
  - ☐ Provide a discussion of the methods used to determine revegetation success. See Guideline 2 for further information.
- ☐ Reclamation and postmining environmental monitoring
  - ☐ Monitoring plans for reclamation and postmining environmental Detailed plans should be developed in consultation with and submitted to the LQD before commencement of mining

Restoration/Reclamation Cost Estimates

- ☐ Estimate of the reclamation costs broken down by different types of disturbance and different phases of reclamation work.
- ☐ Costs should be based on reclaiming the entire affected area after the first year as if the mine were to shut down at that time and be completely reclaimed including removal of all facilities
- ☐ Cost estimates should include restoration of the anticipated affected groundwater as well as surface reclamation
- ☐ Information regarding buildings must include the following details:
  - ☐ Size – width, length, and height
  - ☐ Material
  - ☐ Concrete thickness – floor and footers
  - ☐ Sump detail
- ☐ A spreadsheet that allows for an efficient calculation of the bond estimate
- ☐ Included projected Gantt chart showing completion schedule for each major reclamation task
- ☐ Itemized accounting of all labor costs including number and categories of personnel, salaries, and total hours required

- ☐ All assumptions and backup calculations must be included

Appendix D to Subsection 4.3
Decommissioning Plan Checklist

Department of Environmental Quality

WYOMING

DECOMMISSIONING PLAN CHECKLIST

Licensee

Name:

License

Number:

Facility:

Decommissioning Plan Dated/Version:

For the acceptance review, Wyoming Uranium Recovery Program (URP) staff will use this checklist to conduct completeness review of the decommissioning plan (DP). The detailed technical review assesses the technical adequacy and completeness of the information.

Staff should use the checklist first during the initial meeting with the licensee to discuss the scope and content of the DP. In most cases, licensees will not be required to submit all of the information in this checklist. The staff, in conjunction with the licensee, should determine what information should be submitted for the site, based on the uses of radioactive material at the site, the extent and types of radioactive material contamination, the manner in which the licensee intends to decommissioning the facility, and other factors affecting the potential for increased risk to the public or workers from the decommissioning operations. This information should be documented by modifying the acceptance review checklist. Copies of the modified checklist should be provided to the licensee and maintained by the URP reviewer. When the DP is submitted, the reviewer should use the modified checklist to perform the acceptance review.

During the acceptance review, the staff will review the DP table of contents and the individual DP chapters or sections to ensure that the licensee has included this information in the DP. In addition, the staff may use NUREG 1569, NUREG 1620, and, to a limited extent, NUREG 1727 and NUREG 1757, to determine if the level of detail of the information appears to be adequate for the staff to perform a detailed technical review. Specifically, for in-situ uranium recovery operations, additional decommissioning plan information found in NUREG-1569, Appendix C should be addressed by the proposed licensee.

Staff should recognize that failure to supply an item included in the checklist does not necessarily constitute grounds for rejecting the DP. Rather, the staff should determine if the licensee can supply the information in a timely manner and, if so, communicate the additional information needs to the licensee in a deficiency letter. Only in those cases where a detailed technical review cannot begin without the required information should the DP be rejected.

For the detailed technical review, staff should assess the technical accuracy and completeness of the information using the modified checklist.

I. EXECUTIVE SUMMARY

- ☐ The name and address of the licensee or owner of the site
- ☐ The location and address of the site
- ☐ A brief description of the site and immediate environs
- ☐ A summary of the licensed activities that occurred at the site
- ☐ The nature and extent of contamination at the site
- ☐ The decommissioning objective proposed by the licensee (i.e., restricted or unrestricted use)
- ☐ The DCGLs for the site, the corresponding doses from these DCGLs, and the method that was use to determine the DCGLs
- ☐ A summary of the ALARA evaluations performed to support the decommissioning
- ☐ If the licensee requests license termination under restricted conditions the Radium Benchmark Dose Approach, as required in 10 CFR Part 40 Appendix A, and a summary of institutional controls and financial assurance as required in 10 CFR Part 40 Appendix A.
- ☐ If the licensee cannot meet an groundwater standards under 10 CFR Part 40, Appendix A, i.e. background or the MCL's, an Alternate Contaminant Limit will be proposed that meets the requirements specified by the URP and DEQ
- ☐ The proposed initiation and completion dates of decommissioning
- ☐ Any post-remediation activities (such as ground water monitoring) that the licensee proposes to undertake prior to requesting license termination
- ☐ A statement that the licensee is requesting that its license be amended to incorporate the DP
- ☐ Please see Appendix B, C, and E of NUREG-1569 for additional guidance

II. FACILITY OPERATING HISTORY

II.a. LICENSE NUMBER/STATUS/AUTHORIZED ACTIVITIES

- ☐ The radionuclides and maximum activities of radionuclides authorized and used under the current license
- ☐ The chemical forms of the radionuclides authorized and used under the current license
- ☐ A detailed description of how the radionuclides are currently being used at the site
- ☐ The location(s) of use and storage of the various radionuclides authorized under current licenses
- ☐ A scale drawing or map of the building or site and environs showing the current locations of radionuclide use at the site

- ☐ A list of amendments to the license since the last license renewal

II.b. LICENSE HISTORY

- ☐ The radionuclides and maximum activities of radionuclides authorized and used under all previous licenses
- ☐ The chemical forms of the radionuclides authorized and used under all previous licenses
- ☐ A detailed description of how the radionuclides were used at the site
- ☐ The location(s) of use and storage of the various radionuclides authorized under all previous licenses
- ☐ A scale drawing or map of the site, facilities, and environs showing previous locations of radionuclide use at the site

II.c. PREVIOUS DECOMMISSIONING ACTIVITIES

- ☐ A list or summary of areas at the site that were remediated in the past
- ☐ A summary of the types, forms, activities, and concentrations of radionuclides that were present in previously remediated areas
- ☐ The activities that caused the areas to become contaminated
- ☐ The procedures used to remediate the areas, and the disposition of radioactive material generated during the remediation
- ☐ A summary of the results of the final radiological evaluation of the previously remediated area
- ☐ A scale drawing or map of the site, facilities, and environs showing the locations of previous remedial activity

II.d. SPILLS

- ☐ A summary of areas at the site where spills (or uncontrolled releases) of radioactive material occurred in the past
- ☐ The types, forms, activities, and concentrations of radionuclides involved in the spill or uncontrolled release
- ☐ A scale drawing or map of the site, facilities, and environs showing the locations of spills

II.e. PRIOR ONSITE BURIALS

- ☐ A summary of areas at the site where radioactive material has been buried in the past
- ☐ The types, forms, activities and concentrations of waste and radionuclides in the former burial

- ☐ A scale drawing or map of the site, facilities, and environs showing the locations of former burials

III. FACILITY DESCRIPTION

III.a. SITE LOCATION AND DESCRIPTION

- ☐ The size of the site in acres or square meters
- ☐ The county in which the site is located
- ☐ The names and distances to nearby communities, towns, and cities
- ☐ A description of the contours and features of the site
- ☐ The elevation of the site
- ☐ A description of property surrounding the site, including the location of all off-site wells used by nearby communities or individuals
- ☐ The location of the site relative to prominent features such as rivers and lakes
- ☐ A map that shows the detailed topography of the site using a contour interval
- ☐ The location of the nearest residences and all significant facilities or activities near the site
- ☐ A description of the facilities (e.g., buildings, parking lots, and fixed equipment) at the site

III.b. POPULATION DISTRIBUTION

- ☐ A summary of the current population in and around the site, by compass vectors
- ☐ A summary of the projected population in and around the site by compass vectors

III.c. CURRENT/FUTURE LAND USE

- ☐ A description of the current land uses in and around the site
- ☐ A summary of anticipated land uses

III.d. METEOROLOGY AND CLIMATOLOGY

- ☐ A description of the general climate of the region
- ☐ Seasonal and annual frequencies of severe weather phenomena
- ☐ Weather-related radionuclide transmission parameters
- ☐ Routine weather-related site deterioration parameters
- ☐ Extreme weather-related site deterioration parameters
- ☐ A description of the local (site) meteorology

- ☐ The National Ambient Air Quality Standards Category of the area in which the facility is located and, if the facility is not in a Category 1 zone, the closest and first downwind Category 1 Zone

III.e. GEOLOGY AND SEISMOLOGY

- ☐ A detailed description of the geologic characteristics of the site and the region around the site
- ☐ A discussion of the tectonic history of the region, regional geomorphology, physiography, stratigraphy, and geochronology
- ☐ A regional tectonic map showing the site location and its proximity to tectonic structures
- ☐ A description of the structural geology of the region and its relationship to the site geologic structure
- ☐ A description of any crustal tilting, subsidence, karst terrain, landsliding, and erosion
- ☐ A description of the surface and subsurface geologic characteristics of the site and its vicinity
- ☐ A description of the geomorphology of the site
- ☐ A description of the location, attitude, and geometry of all known or inferred faults in the site and vicinity
- ☐ A discussion of the nature and rates of deformation
- ☐ A description of any man-made geologic features such as mines or quarries
- ☐ A description of the seismicity of the site and region
- ☐ A complete list of all historical earthquakes that have a magnitude of 3 or more, or a modified Mercalli intensity of IV or more within 200 miles of the site

III.f. SURFACE WATER HYDROLOGY

- ☐ A description of site drainage and surrounding watershed fluvial features
- ☐ Water resource data including maps, hydrographs, and stream records from other agencies (e.g., U.S. Geological Survey and U.S. Army Corps of Engineers)
- ☐ Topographic maps of the site that show natural drainages and man-made features
- ☐ A description of the surface water bodies at the site and surrounding areas
- ☐ A description of existing and proposed water control structures and diversions (both upstream and downstream) that may influence the site
- ☐ Flow-duration data that indicate minimum, maximum, and average historical observations for surface water bodies in the site areas
- ☐ Aerial photography and maps of the site and adjacent drainage areas identifying features such as drainage areas, surface gradients, and areas of flooding

- ☐ An inventory of all existing and planned surface water users, whose intakes could be adversely affected by migration of radionuclides from the site
- ☐ Topographic and/or aerial photographs that delineate the 100-year floodplain at the site
- ☐ A description of any man-made changes to the surface water hydrologic system that may influence the potential for flooding at the site

III.g. GROUND WATER HYDROLOGY

- ☐ A description of the saturated zone Descriptions of monitoring wells Physical parameters
- ☐ A description of ground water flow directions and velocities
- ☐ A description of the unsaturated zone
- ☐ Information on all monitor stations including location and depth
- ☐ A description of physical parameters
- ☐ A description of the numerical analyses techniques used to characterize the unsaturated and saturated zones
- ☐ The distribution coefficients of the radionuclides of interest at the site

IV. NATURAL RESOURCES

- ☐ A description of the natural resources occurring at or near the site
- ☐ A description of potable, agricultural, or industrial ground or surface waters
- ☐ A description of economic, marginally economic, or subeconomic known or identified natural resources as defined in U.S. Geological Survey Circular 831
- ☐ Mineral, fuel, and hydrocarbon resources near and surrounding the site which, if exploited, would affect the licensee's dose estimates

V. RADIOLOGICAL STATUS OF FACILITY

V.a. CONTAMINATED STRUCTURES

- ☐ A list or description of all structures at the facility where licensed activities occurred that contain residual radioactive material in excess of site background levels
- ☐ A summary of the structures and locations at the facility that the licensee has concluded have not been impacted by licensed operations and the rationale for the conclusion
- ☐ A list or description of each room or work area within each of these structures
- ☐ A summary of the background levels used during scoping or characterization surveys
- ☐ A summary of the locations of contamination in each room or work area

- ☐ A summary of the radionuclides present at each location, the maximum and average radionuclide activities in dpm/100cm^2, and, if multiple radionuclides are present, the radionuclide ratios
- ☐ The mode of contamination for each surface (i.e., whether the radioactive material is present only on the surface of the material or if it has penetrated the material)
- ☐ The maximum and average radiation levels in mrem/hr in each room or work area
- ☐ A scale drawing or map of the rooms or work areas showing the locations of radionuclide material contamination
- ☐ Please see Appendix B, C, and E of NUREG-1569 for additional guidance

V.b. CONTAMINATED SYSTEMS AND EQUIPMENT

- ☐ A list or description and the location of all systems or equipment at the facility that contain residual radioactive material in excess of site background levels
- ☐ A summary of the radionuclides present in each system or on the equipment at each location, the maximum and average radionuclide activities in dpm/100cm^2, and, if multiple radionuclides are present, the radionuclide ratios
- ☐ The maximum and average radiation levels in mrem/hr at the surface of each piece of equipment
- ☐ A summary of the background levels used during scoping or characterization surveys
- ☐ A scale drawing or map of the rooms or work areas showing the locations of the contaminated systems or equipment

V.c. SURFACE SOIL CONTAMINATION

- ☐ A list or description of all locations at the facility where surface soil contains residual radioactive material in excess of site background levels
- ☐ A summary of the background levels used during scoping or characterization surveys
- ☐ A summary of the radionuclides present at each location, the maximum and average radionuclide activities in pCi/gm, and, if multiple radionuclides are present, the radionuclide ratios
- ☐ The maximum and average radiation levels in mrem/hr at each location
- ☐ A scale drawing or map of the site showing the locations of radionuclide material contamination in surface soil

V.d. SUBSURFACE SOIL CONTAMINATION

- ☐ A list or description of all locations at the facility where subsurface soil contains residual radioactive material in excess of site background levels
- ☐ A summary of the background levels used during scoping or characterization surveys

- ☐ A summary of the radionuclides present at each location, the maximum and average radionuclide activities in pCi/gm, and, if multiple radionuclides are present, the radionuclide ratios
- ☐ The depth of the subsurface soil contamination at each location
- ☐ A scale drawing or map of the site showing the locations of subsurface soil contamination

V.e. SURFACE WATER

- ☐ A list or description of all surface water bodies at the facility that contain residual radioactive material in excess of site background levels
- ☐ A summary of the background levels used during scoping or characterization surveys
- ☐ A summary of the radionuclides present in each surface water body and the maximum and average radionuclide activities in becquerel per liter (Bq/L) (picocuries per liter (pCi/L))

V.f. GROUND WATER

- ☐ A summary of the aquifer(s) at the facility that contain residual radioactive material in excess of site background levels
- ☐ A summary of the background levels used during scoping or characterization surveys
- ☐ A summary of the radionuclides present in each aquifer and the maximum and average radionuclide activities in becquerel per liter (Bq/L) (picocuries per liter (pCi/L))

VI. DOSE MODELING

VI.a. UNRESTRICTED RELEASE USING SITE-SPECIFIC INFORMATION

- ☐ Source term information including nuclides of interest, configuration of the source, and areal variability of the source
- ☐ Description of the exposure scenario including a description of the critical group
- ☐ Description of the conceptual model of the site including the source term, physical features important to modeling the transport pathways, and the critical group
- ☐ Identification/description of the mathematical model used (e.g., hand calculations, DandD Screen with version number, and RESRAD with version number)
- ☐ Description of the parameters used in the analysis
- ☐ Discussion about the effect of uncertainty on the results
- ☐ Input and output files or printouts, if a computer program was used
- ☐ Please see Appendix E of NUREG-1569 for additional guidance

VI.b. RESTRICTED RELEASE USING SITE-SPECIFICINFORMATION

- ☐ Source term information including nuclides of interest, configuration of the source, areal variability of the source, and chemical forms
- ☐ A description of the exposure scenarios, including a description of the critical group for each scenario
- ☐ A description of the conceptual model(s) of the site that includes the source term, physical features important to modeling the transport pathways, and the critical group for each scenario
- ☐ Identification/description of the mathematical model(s) used (e.g., hand calculations and RESRAD with version number)
- ☐ A summary of parameters used in the analysis
- ☐ A discussion about the effect of uncertainty on the results
- ☐ Input and output files or printouts, if a computer program was used
- ☐ Please see Appendix E of NUREG-1569 for additional guidance

VI.c. RELEASE INVOLVING ALTERNATECRITERIA

- ☐ Source term information including nuclides of interest, configuration of the source, areal variability of the source, and chemical forms
- ☐ A description of the exposure scenarios, including a description of the critical group for each scenario
- ☐ A description of the conceptual model(s) of the site that includes the source term, physical features important to modeling the transport pathways, and the critical group for each scenario
- ☐ Identification/description of the mathematical model(s) used (e.g., hand calculations and RESRAD v5.81)
- ☐ A summary of parameters used in the analysis
- ☐ A discussion about the effect of uncertainty on the results
- ☐ Input and output files or printouts, if a computer program was used

VII. ENVIRONMENTAL INFORMATION

- ☐ Environmental information described in NUREG–1748

VIII. ALARA ANALYSIS

- ☐ A description of how the licensee will achieve a decommissioning goal below the dose limit
- ☐ A quantitative cost benefit analysis
- ☐ A description of how costs were estimated

- ☐ A demonstration that the doses to the average member of the critical group are ALARA

IX. PLANNED DECOMMISSIONING ACTIVITIES

IX.a. CONTAMINATED STRUCTURES

- ☐ A summary of the remediation tasks planned for each room or area in the contaminated structure, in the order in which they will occur
- ☐ A description of the remediation techniques that will be employed in each room or area of the contaminated structure
- ☐ A summary of the radiation protection methods and control procedures that will be employed in each room or area
- ☐ A summary of the procedures already authorized under the existing license and those for which approval is being requested in the DP
- ☐ A commitment to conduct decommissioning activities in accordance with written, approved procedures
- ☐ A summary of any unique safety or remediation issues associated with remediating the room or area

IX.b. CONTAMINATED SYSTEMS AND EQUIPMENT

- ☐ A summary of the remediation tasks planned for each system in the order in which they will occur, including which activities will be conducted by licensee staff and which will be performed by a contractor
- ☐ A description of the techniques that will be employed to remediate each system in the facility or site
- ☐ A description of the radiation protection methods and control procedures that will be employed while remediating each system
- ☐ A summary of the equipment that will be removed or decontaminated and how the decontamination will be accomplished
- ☐ A summary of the procedures already authorized under the existing license and those for which approval is being requested in the DP
- ☐ A commitment to conduct decommissioning activities in accordance with written, approved procedures
- ☐ A summary of any unique safety or remediation issues associated with remediating any system or piece of equipment

IX.c. SOIL

- ☐ A summary of the removal/remediation tasks planned for surface and subsurface soil at the site in the order in which they will occur, including which activities will be

conducted by licensee staff and which will be performed by a contractor

- ☐ A description the techniques that will be employed to remove or remediate surface and subsurface soil at the site
- ☐ A description of the radiation protection methods and control procedures that will be employed during soil removal/remediation
- ☐ A summary of the procedures already authorized under the existing license and those for which approval is being requested in the DP
- ☐ A commitment to conduct decommissioning activities in accordance with written, approved procedures
- ☐ A summary of any unique safety or removal/remediation issues associated with remediating the soil

IX.d. SURFACE AND GROUND WATER

- ☐ A summary of the remediation tasks planned for ground and surface water in the order in which they will occur, including which activities will be conducted by licensee staff and which will be performed by a contractor
- ☐ A description of the remediation techniques that will be employed to remediate the ground or surface water
- ☐ A description of the radiation protection methods and control procedures that will be employed during ground or surface water remediation
- ☐ A summary of the procedures already authorized under the existing license and those for which approval is being requested in the DP
- ☐ A commitment to conduct decommissioning activities in accordance with written, approved procedures
- ☐ A summary of any unique safety or remediation issues associated with remediating the ground or surface water

IX.e. SCHEDULES

- ☐ A Gantt or PERT chart detailing the proposed remediation tasks in the order in which they will occur
- ☐ A statement acknowledging that the dates in the schedule are contingent upon WDEQ approval of the DP
- ☐ A statement acknowledging that circumstances can change during decommissioning, and, if the licensee determines that the decommissioning cannot be completed as outlined in the schedule, the licensee will provide an updated schedule to WDEQ
- ☐ If the decommissioning is not expected to be completed within the timeframes outlined in WDEQ regulations, a request for alternative schedule for completing the decommissioning

X. PROJECT MANAGEMENT AND ORGANIZATION

X.a. DECOMMISSIONING MANAGEMENT ORGANIZATION

- ☐ A description of the decommissioning organization
- ☐ A description of the responsibilities of each of these decommissioning project units
- ☐ A description of the reporting hierarchy within the decommissioning project management organization
- ☐ A description of the responsibility and authority of each unit to ensure that decommissioning activities are conducted in a safe manner and in accordance with approved written procedures

X.b. DECOMMISSIONING TASK MANAGEMENT

- ☐ A description of the manner in which the decommissioning tasks are managed
- ☐ A description of how individual decommissioning tasks are evaluated and how the Radiation Work Permits (RWPs) are developed for each task
- ☐ A description of how the RWPs are reviewed and approved by the decommissioning project management organization
- ☐ A description of how RWPs are managed throughout the decommissioning project
- ☐ A description of how individuals performing the decommissioning tasks are informed of the procedures in the RWP

X.c. DECOMMISSIONING MANAGEMENT POSITIONS AND QUALIFICATIONS

- ☐ A description of the duties and responsibilities of each management position in the decommissioning organization and the reporting responsibility of the position
- ☐ A description of the duties and responsibilities of each chemical, radiological, physical, and occupational safety-related position in the decommissioning organization and the reporting responsibility of each position
- ☐ A description of the duties and responsibilities of each engineering, quality assurance, and waste management position in the decommissioning organization and the reporting responsibility of each position
- ☐ The minimum qualifications for each of the positions describe above, and the qualifications of the individuals currently occupying the positions
- ☐ A description of all decommissioning and safety committees

X.d. RADIATION SAFETY OFFICER

- ☐ A description of the health physics and radiation safety education and experience required for individuals acting as the licensee's RSO

- ☐ A description of the responsibilities and duties of the RSO
- ☐ A description of the specific authority of the RSO to implement and manage the licensee's radiation protection program

X.e. TRAINING

- ☐ A description of the radiation safety training that the licensee will provide to each employee
- ☐ A description of any daily worker "jobside" or "tailgate" training that will be provided at the beginning of each workday or job task to familiarize workers with job-specific procedures or safety requirements
- ☐ A description of the documentation that will be maintained to demonstrate that training commitments are being met

X.f. CONTRACTOR SUPPORT

- ☐ A summary of decommissioning tasks that will be performed by contractors
- ☐ A description of the management interfaces that will be in place between the's management and onsite supervisors, and contractor management and onsite supervisors
- ☐ A description of the oversight responsibilities and authority that the licensee will exercise over contractor personnel
- ☐ A description of the training that will be provided to contractor personnel by the licensee and the training that will be provided by the contractor
- ☐ A commitment that the contractor will comply with all radiation safety and license requirements at the facility

XI. HEALTH AND SAFETY PROGRAM DURING DECOMMISSIONING: RADIATION SAFETY CONTROLS AND MONITORING FOR WORKERS

XI.a. AIR SAMPLING PROGRAM

- ☐ A description which demonstrates that the air sampling program is representative of the workers breathing zones
- ☐ A description of the criteria which demonstrates that air samplers with appropriate sensitivities will be used, and that samples will be collected at appropriate frequencies
- ☐ A description of the conditions under which air monitors will be used
- ☐ A description of the criteria used to determine the frequency of calibration of the flow meters on the air samplers
- ☐ A description of the action levels for air sampling results

- ☐ A description of how minimum detectable activities (MDA) for each specific radionuclide that may be collected in air samples are determined

XI.b. RESPIRATORY PROTECTION PROGRAM

- ☐ A description of the process controls, engineering controls, or procedures to control concentrations of radioactive materials in air
- ☐ A description of the evaluation which will be performed when it is not practical to apply engineering controls or procedures
- ☐ A description of the considerations used which demonstrates respiratory protection equipment is appropriate for a specific task based on the guidance on assigned protection factors
- ☐ A description of the medical screening and fit testing required before workers will use any respirator that is assigned a protection factor
- ☐ A description of the written procedures maintained to address all the elements of the respiratory protection program
- ☐ A description of the use, maintenance, and storage of respiratory protection devices
- ☐ A description of the respiratory equipment users training program
- ☐ A description of the considerations made when selecting respiratory protection equipment

XI.c. INTERNAL EXPOSURE DETERMINATION

- ☐ A description of the monitoring to be performed to determine worker exposure
- ☐ A description of how worker intakes are determined using measurements of quantities of radionuclides excreted from, or retained in the human body
- ☐ A description of how worker intakes are determined by measurements of the concentrations of airborne radioactive materials in the workplace
- ☐ A description of how worker intakes for an adult, a minor, and a declared pregnant woman (DPW) are determined using any combination of the measurements above, as may be necessary
- ☐ A description of how worker intakes are converted into committed effective dose equivalent

XI.d. EXTERNAL EXPOSURE DETERMINATION

- ☐ A description of the individual-monitoring devices which will be provided to workers
- ☐ A description of the type, range, sensitivity, and accuracy of each individual-monitoring device
- ☐ A description of the use of extremity and whole body monitors when the external radiation field is non-uniform

- ☐ A description of when audible-alarm dosimeters and pocket dosimeters will be provided
- ☐ A description of how external dose from airborne radioactive material is determined
- ☐ A description of the procedure to insure that surveys necessary to supplement personnel monitoring are performed
- ☐ A description of the action levels for worker's external exposure, and the technical bases and actions to be taken when they are exceeded

XI.e. SUMMATION OF INTERNAL AND EXTERNAL EXPOSURES

- ☐ A description of how the internal and external monitoring results are used to calculate TODE and TEDE doses to occupational workers
- ☐ A description of how internal doses to the embryo/fetus, which is based on the intake of an occupationally-exposed DPW will be determined
- ☐ A description of the monitoring of the intake of a DPW, if determined to be necessary
- ☐ A description of the program for the preparation, retention, and reporting of records for occupational radiation exposures

XI.f. CONTAMINATION CONTROL PROGRAM

- ☐ A description of the written procedures to control access to, and stay time in, contaminated areas by workers, if they are needed
- ☐ A description of surveys to supplement personnel monitoring for workers during routine operations, maintenance, clean-up activities, and special operations
- ☐ A description of the surveys which will be performed to determine the baseline of background radiation levels and radioactivity from natural sources for areas where decommissioning activities will take place
- ☐ A description in matrix or tabular form which describes contamination action limits (that is, actions taken to either decontaminate a person, place, or area, restrict access, or modify the type or frequency of radiological monitoring)
- ☐ A description (included in the matrix or table mentioned above) of proposed radiological contamination guidelines for specifying and modifying the frequency for each type of survey used to assess the reduction of total contamination
- ☐ A description of the procedures used to test sealed sources, and to insure that sealed sources are leaked tested at appropriate intervals

XI.g. INSTRUMENTATION PROGRAM

- ☐ A description of the instruments to be used to support the health and safety program
- ☐ A description of instrumentation storage, calibration, and maintenance facilities for instruments used in field surveys

- ☐ A description of the method used to estimate the MDC or MDA (at the 95 percent confidence level) for each type of radiation to be detected
- ☐ A description of the instrument calibration and quality assurance procedures
- ☐ A description of the methods used to estimate uncertainty bounds for each type of instrumental measurement
- ☐ A description of air sampling calibration procedures or a statement that the instruments will be calibrated by an accredited laboratory

X.i. HEALTH PHYSICS AUDITS, INSPECTIONS, AND RECORDKEEPING PROGRAM

- ☐ A general description of the annual program review conducted by executive management
- ☐ A description of the records to be maintained of the annual program review and executive audits
- ☐ A description of the types and frequencies of surveys and audits to be performed by the RSO and RSO staff
- ☐ A description of the process used in evaluating and dealing with violations of NRC requirements or license commitments identified during audits
- ☐ A description of the records maintained of RSO audits

XII. ENVIRONMENTAL MONITORING AND CONTROL PROGRAM

XII.a. ENVIRONMENTAL ALARA EVALUATION PROGRAM

- ☐ A description of ALARA goals for effluent control
- ☐ A description of the procedures, engineering controls, and process controls to maintain doses ALARA
- ☐ A description of the ALARA reviews and reports to management

XII.b. EFFLUENT MONITORING PROGRAM

- ☐ A demonstration that background and baseline concentrations of radionuclides in environmental media have been established through appropriate sampling and analysis
- ☐ A description of the known or expected concentrations of radionuclides in effluents
- ☐ A description of the physical and chemical characteristics of radionuclides in effluents
- ☐ A summary or diagram of all effluent discharge locations
- ☐ A demonstration that samples will be representative of actual releases
- ☐ A summary of the sample collection and analysis procedures
- ☐ A summary of the sample collection frequencies

- ☐ A description of the environmental monitoring recording and reporting procedures
- ☐ A description of the quality assurance program to be established and implemented for the effluent monitoring program

XII.c. EFFLUENT CONTROL PROGRAM

- ☐ A description of the controls that will be used to minimize releases of radioactive material to the environment
- ☐ A summary of the action levels and a description of the actions to be taken should a limit be exceeded
- ☐ A description of the leak detection systems for ponds, lagoons, and tanks
- ☐ A description of the procedures to ensure that releases to sewer systems are controlled and maintained to meet the requirements of 10 CFR 20.2003
- ☐ A summary of the estimates of doses to the public from effluents and a description of the method used to estimate public dose

XIII. RADIOACTIVE WASTE MANAGEMENTPROGRAM

XIII.a. SOLID RADWASTE

- ☐ A summary of the types of solid radwaste that are expected to be generated during decommissioning operations
- ☐ A summary of the estimated volume, in cubic feet, of each solid radwaste type summarized in Line 1 above
- ☐ A summary of the radionuclides (including the estimated activity of each radionuclide) in each estimated solid radwaste type summarized in Line 1 above
- ☐ A summary of the volumes of Class A, B, and C solid radwaste that will be generated by decommissioning operations
- ☐ A description of how and where each of the solid radwaste summarized in Line 1 above will be stored onsite prior to shipment for disposal
- ☐ A description of how the each of the solid radwastes summarized in Line 1 above will be treated and packaged to meet disposal site acceptance criteria prior to shipment for disposal
- ☐ If appropriate, how the licensee intends to manage volumetrically contaminated material
- ☐ A description of how the licensee will prevent contaminated soil, or other loose solid radwaste, from being re-disbursed after exhumation and collection
- ☐ The name and location of the disposal facility that the licensee intends to use for each solid radwaste type summarized in Line 1 above
- ☐ Please see Appendix C of NUREG-1569 for additional guidance

XIII.b. LIQUID RADWASTE

- ☐ A summary of the types of liquid radwaste that are expected to be generated during decommissioning operations
- ☐ A summary of the estimated volume, in liters, of each liquid radwaste type summarized in Line 1 above
- ☐ A summary of the radionuclides (including the estimated activity of each radionuclide) in each liquid radwaste type summarized in Line 1 above
- ☐ A summary of the estimated volumes of Class A, B, and C radwaste that will be generated by decommissioning operations
- ☐ A description of how and where each of the liquid radwastes summarized in Line 1 above will be stored onsite prior to shipment for disposal
- ☐ A description of how the each of the liquid radwastes summarized in Line 1 above will be treated and packaged to meet disposal site acceptance criteria prior to shipment for disposal
- ☐ The name and location of the disposal facility that the licensee intends to use for each liquid radwaste type summarized in Line 1 above

XIV. QUALITY ASSURANCE PROGRAM

XIV.a. ORGANIZATION

- ☐ A description of the QA program management organization
- ☐ A description of the duties and responsibilities of each unit within the organization and how delegation of responsibilities is managed within the decommissioning program
- ☐ A description of how work performance is evaluated
- ☐ A description of the authority of each unit within the QA program
- ☐ An organization chart of the QA program organization

XIV.b. QUALITY ASSURANCE PROGRAM

- ☐ A commitment that activities affecting the quality of site decommissioning will be subject to the applicable controls of the QA program and activities covered by the QA program are identified on program defining documents
- ☐ A brief summary of the company's corporate QA policies
- ☐ A description of provisions to ensure that technical and quality assurance procedures required to implement the QA program are consistent with regulatory, licensing, and QA program requirements and are properly documented and controlled
- ☐ A description of the management reviews, including the documentation of concurrence in these quality-affecting procedures

- ☐ A description of the quality-affecting procedural controls of the principal contractors
- ☐ A description of how URP will be notified of changes (a) for review and acceptance in the accepted description of the QA program as presented or referenced in the DP before implementation and (b) in organizational elements within 30 days after the announcement of the changes
- ☐ A description is provided of how management regularly assesses the scope, status, adequacy, and compliance of the QA program
- ☐ A description of the instruction provided to personnel responsible for performing activities affecting quality
- ☐ A description of the training and qualifications of personnel verifying activities
- ☐ For formal training and qualification programs, documentation includes the objectives and content of the program, attendees, and date of attendance
- ☐ A description of the self-assessment program to confirm that activities affecting quality comply with the QA program
- ☐ A commitment that persons performing self-assessment activities are not to have direct responsibilities in the area they are assessing
- ☐ A description of the organizational responsibilities for ensuring that activities affecting quality are (a) prescribed by documented instructions, procedures, and drawings and
- ☐ (b) accomplished through implementation of these documents
- ☐ A description of the procedures to ensure that instructions, procedures, and drawings include quantitative acceptance criteria and qualitative acceptance criteria for determining that important activities have been satisfactorily performed

XIV.c. DOCUMENT CONTROL

- ☐ A summary of the types of QA documents that are included in the program
- ☐ A description of how the licensee develops, issues, revises, and retires QA documents

XIV.d. CONTROL OF MEASURING AND TEST EQUIPMENT

- ☐ A summary of the test and measurement equipment used in the program
- ☐ A description of how and at what frequency the equipment will be calibrated
- ☐ A description of the daily calibration checks that will be performed on each piece of test or measurement equipment
- ☐ A description of the documentation that will be maintained to demonstrate that only properly calibrated and maintained equipment was used during the decommissioning

XIV.e. CORRECTIVE ACTION

- ☐ A description of the corrective action procedures for the facility, including a

description of how the corrective action is determined to be adequate

- ☐ A description of the documentation maintained for each corrective action and any follow-up activities by the QA organization after the corrective action is implemented

XIV.f. QUALITY ASSURANCE RECORDS

- ☐ A description of the manner in which the QA records will be managed
- ☐ A description of the responsibilities of the QA organization
- ☐ A description of the QA records storage facility

XIV.g. AUDITS AND SURVEILLANCES

- ☐ A description of the audit program
- ☐ A description of the records and documentation generated during the audits and the manner in which the documents are managed
- ☐ A description of all follow-up activities associated with audits or surveillances
- ☐ A description of the trending/tracking that will be performed on the results of audits and surveillances

XV. FACILITY RADIATION SURVEYS

XV.a. RELEASE CRITERIA

- ☐ A summary table or list of the $DCGL_W$ for each radionuclide and impacted media of concern
- ☐ If Class 1 survey units are present, a summary table or list of area factors that will be used for determining a $DCGL_{EMC}$ for each radionuclide and media of concern
- ☐ If Class 1 survey units are present, the $DCGL_{EMC}$ values for each radionuclide and medium of concern
- ☐ If multiple radionuclides are present, the appropriate $DCGL_W$ for the survey method to be used

XV.b. CHARACTERIZATION SURVEYS

- ☐ A description and justification of the survey measurements for impacted media
- ☐ A description of the field instruments and methods that were used for measuring concentrations and the sensitivities of those instruments and methods
- ☐ A description of the laboratory instruments and methods that were used for measuring concentrations and the sensitivities of those instruments and methods
- ☐ The survey results, including tables or charts of the concentrations of residual radioactivity measured
- ☐ Maps or drawings of the site, area, or building, showing areas classified as non-

impacted or impacted

- ☐ Justification for considering areas to be non-impacted
- ☐ A discussion of why the licensee considers the characterization survey to be adequate to demonstrate that it is unlikely that significant quantities of residual radioactivity have gone undetected
- ☐ For areas and surfaces that are inaccessible or not readily accessible, a discussion of how they were surveyed or why they did not need to be surveyed
- ☐ For sites, areas, or buildings with multiple radionuclides, a discussion justifying the ratios of radionuclides that will be assumed in the final status survey or an indication that no fixed ratio exists and each radionuclide will be measured separately

XV.c. IN-PROCESS SURVEYS

- ☐ A description of field screening methods and instrumentation
- ☐ A demonstration that field screening should be capable of detecting residual radioactivity at the DCGL

XV.d. FINAL STATUS SURVEY DESIGN

- ☐ A brief overview describing the final status survey design
- ☐ A description and map or drawing of impacted areas of the site, area, or building classified by residual radioactivity levels (Class 1, 2, or 3) and divided into survey units with an explanation of the basis for division into survey units
- ☐ A description of the background reference areas and materials, if they will be used, and a justification for their selection
- ☐ A summary of the statistical tests that will be used to evaluate the survey results. A description of scanning instruments, methods, calibration, operational checks, coverage, and sensitivity for each media and radionuclide.
- ☐ For in-situ sample measurements made by field instruments, a description of the instruments, calibration, operational checks, sensitivity, and sampling methods, with a demonstration that the instruments and methods have adequate sensitivity
- ☐ A description of the analytical instruments for measuring samples in the laboratory, as well as calibration, sensitivity, and methods with a demonstration that the instruments and methods have adequate sensitivity
- ☐ A description of how the samples to be analyzed in the laboratory will be collected, controlled, and handled
- ☐ A description of the final status survey investigation levels and how they were determined
- ☐ A summary of any significant additional residual radioactivity that was not accounted for during site characterization

- ☐ A summary of direct measurement results and/or soil concentration levels in units that are comparable to the DCGL, and if data is used to estimate or update the survey unit
- ☐ A summary of the direct measurements or sample data used to both evaluate the success of remediation and to estimate the survey unit variance

XV.e. FINAL STATUS SURVEY REPORT

- ☐ An overview of the results of the final status survey
- ☐ A discussion of any changes that were made in the final status survey from what was proposed in the DP or other prior submittals
- ☐ A description of the method by which the number of samples was determined for each survey unit
- ☐ A summary of the values used to determine the number of samples and a justification for these values
- ☐ The survey results for each survey unit include:
- ☐ The number of samples taken for the survey unit;
- ☐ A description of the survey unit, including (a) a map or drawing of the survey unit showing the reference system and random start systematic sample locations for Class 1 and 2 survey units and random locations shown for Class 3 survey units and reference areas, and (b) a discussion of remedial actions and unique features;
- ☐ The measured sample concentrations in units that are comparable to the DCGL;
- ☐ The statistical evaluation of the measured concentrations;
- ☐ Judgmental and miscellaneous sample data sets reported separately from those samples collected for performing the statistical evaluation;
- ☐ A discussion of anomalous data, including any areas of elevated direct radiation detected during scanning that exceeded the investigation level or measurement locations in excess of $DCGL_W$; and
- ☐ A statement that a given survey unit satisfied the $DCGL_W$ and the elevated measurement comparison if any sample points exceeded the $DCGL_W$.
- ☐ A description of any changes in initial survey unit assumptions relative to the extent of residual radioactivity (e.g., material not accounted for during site characterization)
- ☐ A description of how ALARA practices were employed to achieve final activity levels
- ☐ If a survey unit fails, a description of the investigation conducted to ascertain the reason for the failure and a discussion of the impact that the failure has on the conclusion that the facility is ready for final radiological surveys and that it satisfies the release criteria
- ☐ If a survey unit fails, a discussion of the impact that the reason for the failure has on other survey unit information

XVI. FINANCIAL ASSURANCE

XVI.a. COST ESTIMATE

☐ A cost estimate that appears to be based on documented and reasonable assumptions

XVI.b. CERTIFICATION STATEMENT

☐ The licensee is eligible to use a certification of financial assurance and, if eligible, that the certification amount is appropriate

XVI.c. FINANCIAL MECHANISM

☐ The financial assurance mechanism supplied by the licensee consists of one or more of the acceptable financial assurances and instruments referred to in W.S. §§ 35-11-417 through 418

☐ The financial assurance mechanism is an originally signed duplicate

XVII. RESTRICTED USE/ALTERNATE CRITERIA

XVII.a. RESTRICTED USE

XVII.a.1. Eligibility Demonstration

☐ A demonstration that the benefits of dose reduction are less than the cost of doses, injuries, and fatalities

☐ A demonstration that the proposed residual radioactivity levels at the site are ALARA

XVII.a.2. Institutional Controls

☐ A description of the legally enforceable institutional control(s) and an explanation of how the institutional control is a legally enforceable mechanism

☐ A description of any detriments associated with the maintenance of the institutional control(s)

☐ A description of the restrictions on present and future landowners

☐ A description of the entities enforcing, and their authority to enforce, the institutional control(s)

☐ A description of the design features of the site that support institutional controls

☐ A discussion of the durability of the institutional control(s), including the performance of any engineered barriers used

☐ A description of the activities that the entity with the authority to enforce the institutional controls may undertake to enforce the institutional control(s)

☐ A description of the manner in which the entity with the authority to enforce the institutional control(s) will be replaced if that entity is no longer willing or able to enforce the institutional control(s) (this may not be needed for Federal or State entities)

- ☐ A description of the duration of the institutional control(s), the basis for the duration, the conditions that will end the institutional control(s), and the activities that will be undertaken to end the institutional control(s)
- ☐ A description of the plans for corrective actions that may be undertaken in the event the institutional control(s) fail
- ☐ A description of the records pertaining to the institutional controls, how and where will they will be maintained, and how the public will have access to the records

XVII.a.3. Site Maintenance and Financial Assurance

- ☐ A demonstration that an appropriately qualified entity has been provided to control and maintain the site
- ☐ A description of the site maintenance and control program and the basis for concluding that the program is adequate to control and maintain the site
- ☐ A description of the arrangement or contract with the entity charged with carrying out the actions necessary to maintain control at the site
- ☐ A demonstration that the contract or arrangement will remain in effect for as long as feasible, and include provisions for renewing or replacing the contract
- ☐ A description of the manner in which independent oversight of the entity charged with maintaining the site will be conducted and what entity will conduct the oversight
- ☐ A demonstration that the entity providing the oversight has the authority to replace the entity charged with maintaining the site
- ☐ A description of the authority granted to the third party to perform, or have performed, any necessary maintenance activities
- ☐ Unless the entity is a government entity, a demonstration that the third party is not the entity holding the financial assurance mechanism
- ☐ A demonstration that sufficient records evidencing to official actions and financial payments made by the third party are open to public inspection
- ☐ A description of the periodic site inspections that will be performed by the third party, including the frequency of the inspections
- ☐ A copy of the financial assurance mechanism provided by the licensee
- ☐ A demonstration that the amount of financial assurance provided is sufficient to allow an independent third party to carry out any necessary control and maintenance activities
- ☐ Please see Appendix C of NUREG-1569 for additional guidance

XVII.a.4. Obtaining Public Advice

- ☐ A description of how individuals and institutions that may be affected by the decommissioning were identified and informed of the opportunity to provide advice to

the licensee

- ☐ A description of the manner in which the licensee obtained advice from these individuals or institutions
- ☐ A description of how the licensee provided for participation by a broad cross-section of community interests in obtaining the advice
- ☐ A description of how the licensee provided for a comprehensive, collective discussion on the issues by the participants represented
- ☐ A copy of the publicly available summary of the results of discussions, including individual viewpoints of the participants on the issues, and the extent of agreement and disagreement among the participants
- ☐ A description of how this summary has been made available to the public
- ☐ A description of how the licensee evaluated the advice, and the rationale for incorporating or not incorporating the advice from affected members of the community into the DP

XVII.a.5. Dose Modeling and ALARA Demonstration

- ☐ A summary of the dose to the average member of the critical group when radionuclide levels are at the DCGL. This should be completed for each nuclide of concern, i.e. Ra-226, Th-230, U-Nat, and Th-232 (as applicable). Please see Appendix E of NUREG-1569 for additional information necessary to complete this evaluation.
- ☐ A summary of the evaluation performed pursuant to NUREG 1569 and/or NUREG 1620
- ☐ If the estimated dose to the average member of the critical group could exceed
- ☐ 100 mrem/y (but would be less than 500 mrem/y) when the radionuclide levels are at the DCGL, a demonstration that the criteria in 10 CFR 40 Appendix A have been met, and how ALARA is or will be applied

XVII.b. ALTERNATE CRITERIA

- ☐ A summary of the dose in TEDE(s) to the average member of the critical group when the radionuclide levels are at the DCGL (considering all man-made sources other than medical)
- ☐ A summary of the evaluation performed pursuant to NUREG 1569 and/or NUREG 1620
- ☐ An analysis of all possible sources of exposure to radiation at the site and a discussion of why it is unlikely that the doses from all man-made sources, other than medical, will be more than 1 mSv/y (100 mrem/y)
- ☐ A description of the legally enforceable institutional control(s) and an explanation of how the institutional control is a legally enforceable mechanism
- ☐ A description of any detriments associated with the maintenance of the institutional control(s)

- ☐ A description of the restrictions on present and future landowners
- ☐ A description of the entities enforcing and their authority to enforce the institutional control(s)
- ☐ A discussion of the durability of the institutional control(s)
- ☐ A description of the activities that the party with the authority to enforce the institutional controls will undertake to enforce the institutional control(s)
- ☐ A description of the manner in which the entity with the authority to enforce the institutional control(s) will be replaced if that entity is no longer willing or able to enforce the institutional control(s)
- ☐ A description of the duration of the institutional control(s), the basis for the duration, the conditions that will end the institutional control(s), and the activities that will be undertaken to end the institutional control(s)
- ☐ A description of the corrective actions that will be undertaken in the event the institutional control(s) fail
- ☐ A description of the records pertaining to the institutional controls, how and where they will be maintained, and how the public will have access to the records
- ☐ A description of how individuals and institutions that may be affected by the decommissioning were identified and informed of the opportunity to provide advice to the licensee
- ☐ A description of the manner in which the licensee obtained advice from affected individuals or institutions
- ☐ A description of how the licensee provided for participation by a broad cross-section of community interests in obtaining the advice
- ☐ A description of how the licensee provided for a comprehensive, collective discussion on the issues by the participants represented
- ☐ A copy of the publicly available summary of the results of discussions, including individual viewpoints of the participants on the issues and the extent of agreement and disagreement among the participants
- ☐ A description of how this summary has been made available to the public
- ☐ A description of how the licensee evaluated advice from individuals and institutions that could be affected by the decommissioning and the manner in which the advice was addressed

Appendix E to Subsection 4.3
Tracking Summary Sheet

Department of Environmental Quality

WYOMING

Appendix E

Licensing Review QA Summary Sheet

File No.:	**Type of Licensing Action**
Licensee:	New
Location:	Renewal
License Type:	Amendment
Date of Application:	Termination
License No.:	
Amendment No.:	**License Reviewer:**

No.	**Comments for Report**
	Questions for Reviewers

Supervisory Review By: _____ Date:_____

Findings Discussed With: _____ Date:_____

Due Date For License Review: _____

Subsection 4.4
Inspection Program

Department of Environmental Quality

WYOMING

4.4 Inspection Program Elements

A State may adopt technical inspection procedures modeled on Inspection Manual Chapter 2800, or the procedures of an existing Agreement State.

Non-technical administrative procedures, such as a procedure for assigning inspections to inspectors, are usually not key contributors to program performance. The review team usually reviews samples of these procedures. The team only needs to conclude that the State has written administrative procedures for inspections, and that they contain no obvious major defects.

- Wyoming has adopted technical inspection procedures (URP-01 through URP-05) modeled on NRC manual chapters, NRC inspection procedures, and procedures of existing Agreement States. These chapters are provided in Appendix A of Subsection 4.4
- Wyoming has written administrative procedures for inspections that meet NRC's criteria.

4.4.1 Procedures for Inspecting Facilities Where Radioactive Material is Stored or Used

The technical inspection procedures should address the following areas

(a) Scheduling of inspections and the different kinds of inspections (i.e., routine, reactive, reciprocity, security, etc.)

- See Appendix A of Subsection 4.4 URP-01 Section 12.

(b) Inspection frequencies, including information on conducting pre-licensing inspections.

- See Appendix A of Subsection 4.4 URP-01 Section 12.

(c) The format and guidance of inspection reports,

- See Appendix A of Subsection 4.4, URP-01 Section 11, URP-04 Section 3.

(d) Performance of inspections, including performance based criteria,

- See Appendix A of Subsection 4.4 (ex. URP-01 Section 8)..

(e) Notification to licensees of results and whether or not the licensee is in compliance,

- See Inspection Procedures Appendix A of Subsection 4.4 (ex. URP-01 Sect.11).

(f) State field instrumentation and laboratory analysis including calibration and quality assurance.

- See Appendix A of Subsection 4.4, URP-05.

(g) The technical procedures should not address administrative matters such as inspection fees.

4.4.1.1 Information needed

(a) The State should submit inspection procedures, including inspection report formats, checklists, and status reports. Procedures submitted should cover all NRC license program codes of licensees that will transfer to the State. The State should also submit its priority schedule for inspection by program code and its schedule for reciprocity inspections.

- See Appendix A of Subsection 4.4 URP Inspection Procedures.

4.4.1.2 Evaluation Criteria

(a) The State should perform inspections following written procedures that address inspection activities appropriate to the category of licensee being inspected.

- See Appendix A of Subsection 4.4 URP Inspection Procedures.

(b) The State should correlate inspection frequency to the amount and kind of material and type of operation licensed. Routine, initial, and reciprocity inspections should not be less frequent than NRC inspections as listed in Inspection Manual Chapter 2800.

- See Appendix A of Subsection 4.4, URP-01.

(c) Inspection procedures should provide for information exchange between the inspection staff and the licensing staff, as appropriate.

- The staff in the URP will be responsible for inspections and license review. Efforts will be made to share information between staff members.

(d) The procedures should provide guidance to the State Program staff on the use of both field and laboratory instrumentation. The instrumentation is used to evaluate the licensee's control of materials and to verify the licensee measurements. The State should submit a list of its instrumentation for review. The procedures should include procedures on instrument calibration.

- See Appendix A of Subsection 4.4, URP-05.

(e) If the Agreement covers Section 11(e).2 byproduct material, the procedures should also:

1. Provide the capability for quantitative and qualitative analysis of radionuclides associated with natural uranium and its decay chain, primarily; U-238, Ra-226, Th-230, Pb-210, and Rn-222, in a variety of sample media such as will be

encountered from an environmental sampling program.

- As stated in 4.1.2.6, when the State needs to use third party laboratories for verification of licensee decontamination of release surveys the URP will verify the laboratories QA/QC procedures and verify that the correct methods for each constituent is being utilized. At a minimum, URP will require participation in EPA quality assurance programs to demonstrate satisfactory QA/QC.

2. Provide analysis and data reduction from laboratory analytical facilities within 30 days of submittal. State acceptability of quality assurance programs should be established for analytical laboratories. The State should make arrangements to participate in the Environmental Protection Agency quality assurance program for laboratory performance.

- As stated in 4.1.2.6 when the State needs to use third party laboratories for verification of licensee decontamination of release surveys the URP will verify the laboratories QA/QC procedures and verify that the correct methods for each constituent is being utilized. At a minimum URP will require participation in EPA programs to demonstrate satisfactory QA/QC.

3. Provide arrangements for a large number of samples in a variety of sample media resulting from a major accident to be analyzed in a time frame that will allow timely decisions to be made regarding public health and safety

- When the URP is required to send samples to a third party laboratory it will verify that the laboratory can meet expected deadlines.

4. The State should notify licensees of the result of inspections in a short time period, typically within 30 days.

- See Appendix A of Subsection 4.4 URP Inspection Procedures.

5. The team may use the NRC inspection procedures as guidance to evaluate the State inspection procedures. The State procedures should provide a similar level of detail as the equivalent NRC procedures. However, the procedures are not required to be the same as the NRC's procedures as long as they address all significant technical issues. The NRC does not require States to adopt the NRC procedures.

- See Appendix A of Subsection 4.4, URP Inspection Procedures.

4.4.2 Procedures for Assuring the Technical Quality of Inspections and Inspection Reports

Secondary reviews of inspection reports are beneficial for quality assurance purposes and can be used to evaluate the accuracy and integrity of the inspection process. Peer and supervisory reviews are commonly used. Larger programs may use a committee to conduct reviews of selected inspections recently completed. Other forms of effective quality assurance programs are acceptable.

4.4.2.1 Information Needed

The State should submit its procedures addressing peer review, supervisory review, and any other method to ensure the quality of inspections and inspection reports.

- See Appendix A to Subsection 4.4, URP-04, Technical Quality of Inspections and Inspection Reports.

4.4.2.2 Evaluation Criteria

The State should have written procedures to guide program staff. The NRC does not have a preference for any particular format or method. The procedure should reflect the organization of the State Program and any special requirements of State law.

- See Appendix A of Subsection 4.4, URP Inspection Procedures.

4.4.3 Administrative Procedures for Inspections

The routine operation of the program requires administrative processing of an inspection report after the inspector has written it. Written procedures describing the administrative processing steps are useful to ensure that all procedural requirements are completed. They may become critical f there is an unexpected turnover of senior staff.

4.4.3.1 Information Needed

The State should submit its inspection program administrative procedures.

- See Appendix A of Subsection 4.4, URP Inspection Procedures.

4.4.3.2 Evaluation Criteria

The State should have program-specific written procedures. The procedures should reflect the organization of the State program and any special requirements of State statute (i.e., public disclosure or confidentiality).

- See Appendix A of Subsection 4.4, URP Inspection Procedures.

Since these procedures do not require a thorough review, the team may review a selected sampling of the procedures instead.

Appendix A, Subsection 4.4
Inspection Program Procedures

Department of Environmental Quality

WYOMING

Wyoming Department of Environmental Quality
Land Quality Division
Uranium Recovery Program

Uranium Recovery Program Inspection Procedures (In-Situ) (URP-01)

(NRC equivalent IP 89001)

Reviewed:_____ Date:_____

Approved:_____ Date:_____

Ryan Schierman, Uranium Recovery Program Manager

Effective Date:_____

Revision Number:_____

Section 1. Purpose

This Inspection Procedure establishes the routine safety inspection program for uranium recovery operations licensed and regulated under the URP's Rules and Regulations.

Section 2. Objectives

(a) To determine if the licensed activities are being conducted in a manner that will protect the environment, health and safety of workers, and general public;
(b) To determine if the licensee is implementing a radiation safety program that controls the release of radioactive materials, and the radiation exposure as low as reasonably achievable (ALARA);
(c) To determine if the licensee is implementing a security program that properly controls the licensed material to preclude access or use by unauthorized personnel;
(d) To determine if the licensed activities are being conducted in accordance with the rules, license, and commitments made in the license application; and
(e) To establish specific requirements for the frequency with which referenced inspection topics should be performed at facilities.

Section 3. Scope

This URP Inspection Procedure deals primarily with inspection of operating ISR facilities, but also addresses inspection requirements and assessment activities for facilities in construction, pre-operation, start-up status, and decommissioning.

Inspections during the operational phase begin upon the issuance of the facility license, continuing until the facility ceases all operations and is placed on standby or inactive status, or is decommissioned. For inspections of facilities in standby or inactive status, or in decommissioning status, the URP will refer to NRC inspection Manual Chapters 2801 (*Uranium Mills and 11e. (2) Byproduct Material Disposal Site and Facility Inspection Program*) and 2605 (*Decommissioning Procedures for Fuel Cycle and Material Licensees*); Inspection Procedure 87654 (*Uranium Mill, In-Situ leach Uranium Recovery, and 11e.(2) Byproduct Material Disposal Site Decommissioning Inspection*); and NUREG 1575 *MARSIMM* (*Multi-Agency Radiation Survey and Site Investigation Manual*). Furthermore the following NRC Inspection Procedures will be used to guide inspections.

(a) Inspection Procedure 88045, Effluent Control and Environmental Monitoring

(b) Inspection Procedure 88035, Radioactive Waste Processing, Handling, Storage, and Transportation

(c) Inspection Procedure 88030, Radiation Protection

(d) Inspection Procedure 88005, Management Organization Controls.

ISR facilities in non-operating status generally do not pose the same risk levels as operating facilities, especially if licensed material has not yet been introduced into the facilities, or has been placed in storage and is not in process. Inspection topics may be adjusted to reflect the level of risk attached to each situation.

Inspection activities for new facilities or those undergoing major modification when no nuclear material is present are conducted as adjunct to the licensing process. Their purpose is to establish the accuracy of representations made in the license application that certain facility structures or equipment meet stated safety and environmental criteria. Inspections are justified before a license is issued where inspection for the intended purpose would not be practical after construction is complete.

Facilities for which decommissioning plans are being prepared, or have been submitted but not approved, remain as operating facilities. Inspection requirements specified in this chapter remain in effect in these situations, but may be adjusted to account for the lower risk associated with curtailed operations.

For sites in decommissioning, not all inspection procedures may be applicable, and inspection requirements may be adjusted to reflect the different activities and the increased and decreased levels of risk.

Section 4. Inspection Program

The goal of each inspection is to review the licensee's performance since the last inspection to determine if the inspection objectives in Section 2 have been met. The inspection includes observation of the licensed activities, interviews of workers, independent or confirmatory radiation measurements, and documentation of the reviews. Table 1 in Section 12 provides a summary of the frequency and items to be covered during routine inspections.

An examination of the licensee's records should not be considered to be the primary part of the inspection program. Rather, observations of activities in progress, equipment, facilities, and use areas, etc., will be better indicators of the licensee's overall radiation safety program than a review of records alone.

Some of the requirements and guidance sections of this procedure instruct the inspector to "verify" the adequacy of certain aspects of the licensee's program. Whenever possible, verification should be accomplished through discussion, observation, and demonstration.

In the records reviewed, look for trends such as increasing doses or effluent releases. Records such as surveys, waste disposal, effluent releases, transportation of source material, training, and air sampling may be examined randomly until the inspector is satisfied that the records are being maintained and are complete. Other records that are more closely-related to health and safety (such as personnel bioassay records and radiation work permits) should be examined in detail.

In general, inspectors should use caution before retaining copies of licensee documents, unless they are needed to support apparent violations, expedite the inspection (e.g. licensee materials inventories), or make the licensing file more complete. In all cases where licensee documents are retained beyond the inspection, the documents will be subject to the WDEQ Public Record Policy and governing law. Licensees must clearly identify which records are confidential and which records should be withheld from public disclosure.

The inspector should keep the licensee apprised of the inspection findings throughout the course of the inspection and not wait until the exit meeting to discuss important inspection results.

Whenever possible, the inspector should keep URP management informed of significant events (e.g., safety hazards, willful violations, and other potential escalated enforcement issues) identified during the course of the inspection.

Section 5. Inspection Team

A full routine inspection will be planned annually by the Project Lead and led by a Lead Inspector for each individual inspection. Inspections may be performed by a team of differing backgrounds such as one inspector with a health physics background and an understanding of uranium recovery operations, and another with a geology or hydrogeology background with an understanding of the site geological and environmental conditions.

Project Lead: Every calendar year, the annual inspection of each licensee will be assigned to one of the certified uranium recovery inspectors as the "Project Lead." Responsibilities of the Project Lead are to:

(a) Review the Final Inspection Report from the previous year and identify unresolved or outstanding issues;
(b) Prepare the Annual Inspection Plan at the beginning of each calendar year;
(c) Select and assign tasks to the inspection team;
(d) Review the Inspection Reports for each individual inspection in the Annual Inspection Plan; and
(e) Prepare the Final Inspection Report prior to the end of the calendar year.

Lead Inspector: Each individual inspection in the Annual Inspection Plan will be led by one Inspector designated as the "Lead Inspector." Responsibilities of the Lead Inspector are to:

(a) Be familiar with the applicable regulations and license conditions of the assigned inspection topics and previous inspection findings for the topics;
(b) Select the appropriate survey meters for the inspection and verify proper calibration;
(c) Lead the inspection and conduct entrance and exit meetings;
(d) Determine the compliance status and issue a Notice of Violation, if applicable; and
(e) Prepare the Inspection Report for the assigned inspection.

Section 6. Inspection Preparation

During the inspection, inspectors should focus on whether the licensee is in compliance with the statutes, rules and regulations, commitments made in the license application, and the facility license, including any license conditions, license amendments issued since the last inspection, and any program changes described by the licensee since the last inspection. This requires review of documentation submitted in support of the licensing action before the inspection. For new license amendments, the inspection represents the URP's first opportunity to verify whether the licensee has implemented the most recent changes to the license. In other areas, the inspection is an opportunity to verify the continued compliance with the regulations and commitments made in the license application and submittals supporting existing license conditions.

Before the inspection, the inspector should do the following:

(a) Review the applicable parts of regulations, the licensee's license application, and the facility license;
(b) Review the licensee's previous inspection history (at a minimum review the past two inspections), the license, and the status of any allegations or incidents. Note the licensee's commitments in response to previous violations for follow-up during the inspection;
(c) Review event/incident files, to determine whether the licensee was involved in any incident or events. If the URP did receive notification of an incident, review that incident during the inspection and document the licensee's follow up in the inspection report;
(d) Review the most current ALARA audit, semi-annual effluent report, and if applicable the land use survey;
(e) Review pending licensing actions; and
(f) Make necessary travel arrangements and prepare itinerary.

The inspector must be prepared to meet all entry requirements established by the licensee (i.e. use of personal protective equipment, licensee training requirements, etc).

Section 7. Entrance Meeting

The entrance meeting should be conducted after arriving at the site and prior to the inspection. The entrance meeting should include the licensee's management personnel, Radiation Safety Officer (RSO), and as many staff as possible.

The purpose of the entrance meeting is to:

(a) Inform the licensee management and staff that an inspection is being conducted, and if the inspection is either routine or for cause;
(b) Indicate the scopes and schedules of the inspection activities; and
(c) Schedule meetings and interviews with management personnel and staff.

During the entrance meeting one should also include the following discussions:

(a) Operational status and licensed activity updates, such as number of workers/operators during the day and night shifts, facility production, impoundment, evaporation ponds, and on-site construction;
(b) Status updates on any changes in operation, management, and radiation safety personnel, equipment, etc.;
(c) Updates on corrective actions for any accidents, incidents, spills, or emergencies;
(d) Status updates on any violations and unresolved or outstanding issues identified from previous inspections; and
(e) Anything that the licensee wants to tell the Inspector prior to start of the inspection, such as self-identified violations or any concerns or questions regarding the license or inspection.

Section 8. Inspection Topics

An inspector may also inspect the following actions during a routine inspection for operating uranium recovery operations:

(a) Management Organization and Controls.

The purpose is to verify, through interviewing cognizant licensee representatives, that there are enough qualified radiation personnel working and an adequate radiation safety program is being implemented. The Inspector should be familiar with the licensee's administrative procedures, including management responsibilities for safety, qualifications for the radiation workers, and worker training. Inspection activities include the following:

(i) Organizational Structure and Changes.

A. Review the licensee's organization chart and identify radiation personnel changes. Verify if there is enough radiation staff to implement radiation safety and environmental programs;
B. Determine whether the RSO has sufficient authority, and fulfills the appropriate duties commensurate with the size and scope of licensed activities;
C. Review Safety and Environmental Evaluation Review Panel (SERP) activities and verify the licensee had the required membership for the panel. Verify activities were within the authority of the SERP panel (see URP Chapter 8, NRC IP 37001, and 10 C.F.R Part 50.59 for more guidance);
D. Review qualification and training of new radiation workers (10 C.F.R Part 19.12);
E. Review qualifications of RSO and Health Physics Technicians (HPTs) in accordance with Regulatory Guide 8.31; and

F. Interview staff (e.g. RSO, HPT, other radiation and environmental workers, and operators) to understand their roles and responsibilities, level of involvement and management support in the Radiation Safety Program.

(ii) Worker Training for Radiation Safety.

A. Ask what types of training have been offered (employee's training for radiation safety, procedures, license, and company policy, DOT training if applicable every 3 years, daily briefing, training for survey-out meter, etc.). Ask about the content and frequency of each training;
B. Verify that the training program for all site personnel is as described in NRC Regulatory Guide 8.31;
C. Review selected training records for the following categories: employees, contractors, visitors, and new employees;
D. Review RSO's refresher training records, and ask how the licensee gets each necessary worker to attend the training (i.e., is there notice prior to training, a sign-in sheet during training, etc.); and
E. Review audits performed to meet the requirements of 10 C.F.R Part 20.1101(c).

(b) <u>ALARA Program.</u>

The purpose of the ALARA Program is to determine if the licensed activities implement ALARA principles and maintain occupational and public doses ALARA (As Low As Reasonably Achievable). The inspector should be familiar with the licensee's procedures for audits and routine inspections, management involvement in the ALARA program and audits, ALARA reviews for procedures (approved and proposed), and roles of radiation safety committee, if any.

(i) Inspection Activities Should Include the Following:

A. Review records for daily walk-through, weekly/monthly inspections, and quarterly audits;
B. Review meeting records from the radiation safety committee for procedures and program review for ALARA;
C. Review licensee's ALARA goals and how the licensee is meeting them;
D. Verify if workers receive training to understand the ALARA principle and the licensee's ALARA program and goals;
E. Verify that radiation workers are provided with, and wear, the appropriate protective clothing and equipment commensurate with activities being performed; and
F. Review self-identification violation record.

(ii) Applicable Items to Review Before Inspection:

A. Licensee's Most Recent ALARA Report; and
B. Dose History for the Site

(c) Radiation Protection.

The purpose is to verify the performance of the licensee's radiation protection program. The radiation protection program includes:

(i) Occupational Exposure Control and Monitoring
The goal is to verify that workers' exposures, including external and internal exposures, have been controlled ALARA and that the exposures do not exceed regulatory limits specified in 10 C.F.R Part 20. Prior to the inspection, the Inspector should be familiar with the licensee's occupational monitoring procedures for occupational air monitoring (general breathing zone; air particulates, and radon), personal dosimetry for external exposure, and bioassay program. The Inspector should also be familiar with the licensee's engineering controls for effluent releases. In addition, the inspector should be familiar with any regulatory limits and action levels of each monitoring program. The following inspection activities should be conducted:

A. Review monitoring data for each program (air monitoring, personal dosimetry for external exposure, and bioassay) for all workers (radiation workers, other employees, and contractors);
B. Review workers' dose calculations and dose summary. Identify workers with higher doses (external, internal, or TEDE) and further investigate the causes. Verify workers' exposures are ALARA;
C. Determine whether the methods for calculating internal exposure to airborne radioactivity are technically correct. Evaluate the licensee's calculations for technical accuracy;
D. Verify that personnel bioassays are being performed at the correct frequencies and are appropriate for the activities at the site;
E. Identify any positive bioassay results. Further investigate the causes and any corrective actions performed for results above action levels;
F. Verify that the exposures of pregnant workers have been kept ALARA and below regulatory limits for embryo/fetus;
G. Review prior exposure records for new employees;
H. Verify workers are notified of their dose monitoring results per 10 C.F.R Part 19.13(b);
I. Verify that no food or tobacco products or trash are present in radioactive material use areas;
J. Examine some instruments used in air monitoring program. Evaluate the equipment type, calibration, operability, and sample analysis;
K. Verify that personnel dosimetry devices are worn by appropriate licensee personnel. Verify that dosimeters are processed by a National

Voluntary Laboratory Accreditation Program that is an approved-and-accredited processor; and

L. Review applicable regulations and guidance for occupational exposure control and monitoring.

(ii) Respiratory Protection

The goal is to verify that the licensee's respiratory protection program has been properly implemented. The Inspector should be familiar with the licensee's procedure for the respiratory protection program. Inspection activities include:

A. Determine proper selection of equipment;
B. Determine that the equipment is certified or approved;
C. Determine if equipment is available for those workers who need respiratory protection and if these workers are properly fit-tested;
D. Verify worker's training for the use of the equipment;
E. If protection factors have been taken into account in the occupational dose calculations, verify if these workers are using adequate respiratory protection equipment.

(iii) Surveys and Radiation Detection Equipment

The goal is to verify that the licensee is conducting surveys in accordance with the approved procedures with properly calibrated instruments. Surveys include routine and non-routine area and surface contamination (e.g., lunchroom, break rooms, change rooms), equipment release, vehicle, yellowcake drum, and personnel surveys. The inspector should be familiar with all survey procedures (survey protocols, survey locations, instruments, survey frequencies, corrective action, etc.). Inspection activities include:

A. Observe workers who are performing different type of surveys. Verify that the workers understand the limits for free release, action levels, and procedures for decontamination and corrective actions. Ask what actions are taken if survey results are above the limits;
B. Review and verify that process equipment, monitoring equipment, and/or administrative controls are adequate to maintain airborne radioactivity within the limits established by the license and other regulatory requirements and are ALARA;
C. Observe workers performing survey instrument calibrations, if applicable;
D. Verify that equipment and instrumentation are appropriate, operable, calibrated, adequately maintained, and conform to those described in the license application;
E. Verify that the licensee performs surveys for fixed and removable contamination at the required frequencies. If the licensee has had spills

or other incidents of contamination exceeding the licensee's action level, verify that the licensee has taken appropriate action;

F. Randomly select some equipment (survey meters and counting equipment) and check the operability and calibration;
G. Verify correct geometry is being used and ask what isotope was used for the calibration;
H. Review random selection of survey records and calibration records. Pay attention to any high readings;
I. Ask what non-routine surveys were performed and why, if applicable;
J. Ask if any corrective actions were conducted and what triggered them; and
K. Review training records;

(iv) Security and Control of Licensed Radioactive Material

The goal is to verify that the licensee is controlling the licensed radioactive materials to preclude uses by any unauthorized personnel. The inspector should be familiar with the radioactive materials possessed by the licensee and the procedures for site and material security and controls. Inspection activities include:

A. Verify that the licensee has established procedures for maintaining security and control of source material, and that these procedures are understood and implemented by appropriate personnel;
B. Review the licensee's radioactive material inventory and any documentation for receipt, transfer, and disposal of licensed material;
C. Verify that source material (in storage) in controlled or unrestricted areas is secure from unauthorized removal or access. Verify that source material (not in storage) in controlled or unrestricted areas is controlled and under constant surveillance. Verify that access to the restricted area is limited by the licensee;
D. Review records for material placed in impoundments;
E. Examine the security to the restricted areas, including ore pads, processing buildings, areas that store yellowcake drums prior to shipping, laboratories, areas that store radioactive wastes, and any other areas that store radioactive material;
F. Verify that access to the restricted areas is limited by the licensee;
G. Verify that the licensee is controlling the licensed materials in accordance with approved procedures;
H. Verify that the yellowcake drums are in constant surveillance when not in secured storage;
I. Verify that workers are trained to understand the procedure for the security and control of the radioactive materials and access controls to restricted areas;
J. Ask about the roles and responsibilities of security personnel; and
K. Check fences and verify that they are adequate and in good order.

(v) Posting

The goal is to verify that the licensee has posted the appropriate documents, notices, forms, and caution signs as required:

A. Verify that containers of source material and 11.e (2) byproduct material are labeled appropriately;
B. Boundary fences are posted with "Caution, Radioactive Material(s)" or " Danger, Radioactive Material(s) signs;
C. Areas with radiation level greater than 5 mR/hr are posted with "CAUTION RADIATION AREA" signs. Ask how often the radiation area postings are verified (how and by whom); and
D. Notices to Employees, current license, emergency contacts and procedures, and the regulations are posted in areas normally occupied by workers.

(vi) Radiation Work Permits (RWPs).

The goal is to make sure the licensee is conducting non-routine/maintenance work with proper radiation protection and ALARA. The inspector should have a basic understanding of the routine occupational monitoring program and facility operation, and should be familiar with the procedure for RWPs. Inspection activities include:

A. Review all RWPs that were issued since the last inspection; and
B. Verify that all workers (employees and contractors) involved in the RWPs had proper radiation protection equipment if needed and occupational monitoring. Look at the workers' dose monitoring results to verify their exposures did not exceed limits in the URP Rules and that the exposures were maintained ALARA.

(d) <u>Public Doses and Environmental Protection.</u>

The purpose is to verify that: (1) doses to the members of the public do not exceed the limits in 10 C.F.R Part 20; and (2) effluents released from the licensed facilities to the unrestricted areas are adequately controlled and the environment is protected. The inspector should be familiar with the licensee's public dose assessment methods and procedures for environmental monitoring. Prior to the inspection, the inspector should also be familiar with the results of the public dose assessment and environmental monitoring in the most recent versions of the Semiannual Effluent Report and Annual Report. The inspector should pay attention to any abnormal effluent releases or trends showing increasing releases from these reports:

(i) Public Dose Inspections.

A. Are there are any public access areas on-site and, if so, evaluate the licensee's assessment for doses and contamination levels.
B. Determine if all significant release pathways are monitored, all un-monitored pathways have been characterized, and all surveillance procedures for effluents are being implemented.
C. Tour some of the environmental monitoring stations (site boundary and nearest resident) and sampling locations.

(ii) New Wellfield Design inspections shall:

A. Verify that pre-mining groundwater data have been appropriately collected and that pre-mining data indicate that the well field has been suitably designed to prevent horizontal and vertical excursions;
B. Verify that baseline water quality data have been appropriately collected, analyzed, and evaluated to determine upper control limit values and groundwater restoration goals;
C. Verify that upper control limits have been appropriately established for all excursion indicators;
D. Verify that restoration target values have been appropriately established to meet primary restoration goals;
E. Verify that if the well field contains areas of previous conventional mining activities, that the well field has been suitably designed to detect and prevent vertical and horizontal excursions;
F. Verify that the stratigraphic data indicates that there are adequate confining units to prevent vertical excursions;
G. Verify that vertical and horizontal monitor wells have been correctly located to detect potential excursions from the well field;
H. Verify that the appropriate tests of hydrologic confinement have been performed and that the test results meet the criteria established to identify vertical interconnection/interference;
I. Verify that hydrologic tests have been successfully conducted to determine if the horizontal monitor wells have been completed in the ore zone aquifer;
J. Verify that the pre-mining hydrologic properties such as transmissivity and storage coefficient have been correctly determined;
K. Verify that well field pressures are planned to be maintained below casing and formation rupture pressures;
L. Verify that the licensee has appropriately considered these and any other data in determining that: (1) the well field can be safely operated to maintain well field lixiviants in the zone of mining (2) that baseline data has been correctly collected to establish upper control limits and groundwater restoration goals, (3) that well fields have been appropriately designed to detect potential lixiviant movement from the well field;
M. Verify that the well field is contained within the current licensed area and within the EPA Exemption Boundary;

N. Verify that appropriate well completion techniques have been used and that well logs and well completion data confirm that the production, injection, and monitor wells have been correctly located to prevent and detect excursions;
O. Verify well integrity testing has been correctly performed and that all injection and production wells have passed the integrity-test criteria;
P. Verify that upper control limits have been appropriately established for all excursion indicators; and
Q. Verify that pipelines have been appropriately monitored for breakage and that appropriate corrective actions and regulatory notifications have occurred.

(iii) Safe Wellfield Operation.

A. Verify that injection pressures are being maintained below casing and formation rupture pressures.
B. Verify that the licensee is appropriately evaluating wellfield injection and production rates and that the appropriate levels of bleed are being maintained in the wellfields to prevent excursions.
C. Verify that the correct monitor wells are being appropriately monitored for upper control limit values and that excursions are being reported to the Department as required in the license.
D. Verify that any ongoing excursions are being cleaned up, that the Department is being appropriately informed, that the excursions are being monitored, and that the licensee is following its excursion cleanup plan.
E. Verify that license conditions regarding integrity test schedules for injection and production wells are being met (e.g. one MIT per well per 5 years).

(iv) Pond Operation.

A. Verify that ponds have been correctly located within the site boundary and constructed as required by the license.
B. Visually verify that there are no failures or breaks in pond embankments.
C. Visually verify that there are no obvious tears in pond linings.
D. Visually verify that there are no springs or seeps around pond embankment.
E. Visually verify that the groundwater leak-detection and pond water-level monitoring systems are in place and are operational.
F. Verify that the licensee is conducting the appropriate level of visual inspection of pond integrity. Verify that the pond inspection is performed according to procedure.
G. Verify that the pond ground-water leak detection system is being monitored at an appropriate frequency and for the correct indicator parameters.

H. Verify that appropriate monitoring, cleanup, corrective actions, and regulatory notifications have been taken when pond fluids have been found in the pond ground-water leak-detection system.

(v) Water Disposal.

A. Verify that the chemistry of land-disposal, surface-water discharge fluid conforms to licensed water quality requirements.
B. Verify that the deep-well disposal operations conform to applicable license conditions.

(vi) Ground Water Restoration.

A. Verify that groundwater restoration activities conform to the groundwater restoration plan.
B. Verify the status of wellfields (i.e., mining, inactive or restoration).
C. Verify that inactive wellfields are being restored in a timely manner.
D. Verify that groundwater activities are being correctly implemented.
E. Verify that the wellfield is being operated to identify any potential excursions.
F. Verify that the wellfield is being operated to correct and cleanup any existing excursion(s).
G. Verify that the groundwater data are being appropriately collected to determine if the groundwater is being restored.
H. Verify that groundwater samples are being appropriately collected during the restoration and post-restoration phases, to determine restoration success and post-restoration ground-water stability.

(vii) Other Environmental Items.

A. Determine whether effluent monitoring systems and the associated analytical equipment are adequate to detect and quantify effluents with sufficient sensitivity, and whether they are maintained, calibrated, and operated in accordance with manufacturers' recommendations and good health physics practices.
B. Discuss any abnormal monitoring results with the licensee and any corrective actions taken, if applicable.
C. Verify that water disposal operations such as surface-water discharge, deep-well injection, or land disposal are being operated to conform to applicable license conditions.
D. Verify that the environmental staff has proper training in environmental monitoring and understanding of the procedures by asking them to explain the process of sampling, processing and analysis, data management, and QA/QC and result reporting.
E. If available, observe the environmental monitoring activities, such as environmental sample taking, filter/sampler changing, laboratory sample preparation, etc., to verify equipment functionality and adequate

procedures. The inspector should also review equipment calibration records.

F. Verify that all liquid effluents from process buildings and other waste streams, with exception of sanitary wastes, are disposed of as required by license condition.

G. Split samples or independent samples may be taken by the inspector during special inspections.

(e) Operation and Facilities.

The purpose is to verify that the licensee is conducting operations safely and that licensed activities are in accordance with the Regulations, License, companies' procedures, and commitments made in the license application. The inspector should be familiar with the licensee's operation for uranium recovery and relevant operating procedures. Inspection activities include:

(i) Verify that operational procedures are being followed by observing licensee personnel perform tasks at a selected work stations and by comparison of their activities with established procedures;
(ii) Verify that procedures are readily available to any person having responsibility for which the procedures apply, and in addition, ensure that up-to-date copies of written procedures are kept in the process areas to which they apply;
(iii) If applicable, verify the licensee's compliance with any special license conditions that are unique to a particular practice, procedure, or piece of equipment used by the licensee. In these instances, the inspector should verify that the licensee understands the additional requirements, and maintains compliance with the special license conditions;
(iv) During the site tour identify areas that are utilized to store, use, process, and dispose of source materials and byproduct materials. Verify if the facilities operation is conducted in accordance with the license and approved procedures. Continuous radiation scanning should be performed during the site tour;
(v) Ask about the operators' training and responsibilities;
(vi) Tour the control room and ask operators to explain functions on the control panel and how the processes are controlled (electronically/manually);
(vii) Evaluate the mechanism to stop the operational circuit in case of an emergency;
(viii) Review operator's logbook;
(ix) Inspect the ventilation system, including hood flow rates, filter exchanges, and air flow pathways. Ask to see system performance records;
(x) Look for any leaks around the processing tanks;
(xi) Observe and survey yellowcake filtration and drying areas;
(xii) Check efficiency of the air filtering system through monitoring records review, as this is often a bag house arrangement;

(xiii) Ask the yellowcake packaging staff to explain the packaging process and how/what the respiratory protection method is used;
(xiv) Ask how long the yellowcake drums are left to cool down before tightening the lid after being dried and packaged. Ask if there is any system to account for cooling time of each specific yellowcake drum. (i.e., how does the operator know if one specific drum has met the required cooling time before he/she can tighten the lid?). Note: Please review NRC information notice on drum cooling; and
(xv) Pay attention to any new changes since the last inspection, such as new equipment or configuration in the facilities circuit.

(f) Waste Management.

The purpose is to verify that the licensee is handling the 11(e). 2 byproduct material as prescribed by rules, license conditions, and the license application. Inspection items include:

(i) Verify that the waste is stored and controlled in a secure and safe manner;
(ii) Verify that radiation levels in unrestricted areas surrounding the storage area do not exceed the limits of 10 C.F.R Part 20.1301, "Dose limits for individual members of the public";
(iii) Verify that the licensee is conducting appropriate surveys before disposing of the waste;
(iv) Review the licensee's procedures and records to verify that each shipment of radiation waste intended for offsite disposal is accompanied by a shipment manifest that includes all the required information;
(v) Verify that 11e(2) wastes are transferred to an authorized recipient specifically licensed to receive 11e. (2) waste; and
(vi) Verify that records of waste storage, transfer, and disposal are maintained in accordance with the requirements of 10 C.F.R Part 20 and the license.

(g) Transportation of Radioactive Materials.

The purpose is to verify the licensee receives and transports licensed material in accordance with Chapter 9 of the URP's rules and regulation and DOT regulations. Transportation of licensed material in an operating uranium recovery facility mainly includes shipment of yellowcake, and shipment of byproduct material. The Inspector should have basic knowledge of DOT rules and regulations for radioactive material transportation and should be particularly familiar with DOT requirements for shipping ores and yellowcakes. Inspection activities include:

(i). Transportation of Yellowcake:

a. Inspect the storage area for security, safety, ALARA, and inventory control.

b. Inspect the integrity of the drums; in particular, look for any dents and rustiness.
c. Verify proper labeling/marking/placarding on the drums and trucks.
d. Observe how workers survey the drums and trucks. Verify that the survey results are consistent with the information in the shipping papers.
e. Verify that meters are properly calibrated. The inspector should also perform confirmation surveys around the drums and trucks.
f. Inspect documents the truck driver carries with the shipment (shipping paper, emergency contact and procedures, and the License).
g. Review shipping records and shipping papers since last inspection. Verify if all DOT required information is properly included (proper shipping name, signature/date, emergency contact info, and shipper name and address).
h. Ask or observe how the licensee determines the radioactivity for each drum and shipment.

(ii) Transportation of 11e.(2) byproduct material:

a. Inspect the storage area for security, safety, ALARA, and inventory control.
b. Inspect the integrity of the shipping container; in particular, look for any dents and rustiness. Note that the shipping container should be lined.
c. Verify proper labeling/marking/placarding on the shipping container and truck.
d. Observe how workers survey the container. Verify that the survey results are consistent with the information in the shipping papers.
e. Verify that meters are properly calibrated. The Inspector should also perform confirmation surveys around the container and truck.
f. If radioactive shipments arrive or are being shipped during the course of an inspection, the inspector should, when practical, observe personnel perform the required shipment surveys.
g. Inspect documents the truck driver carries with the shipment (shipping paper, emergency contact and procedures, and the License).
h. Review shipping records and shipping papers since the last inspection. Verify if all DOT-required information is properly included (proper shipping name, signature/date, emergency contact info, and shipper name and address).
i. Verify that 11e.(2) wastes are transferred to an authorized recipient specifically licensed to receive 11e.(2) waste.
j. Verify that records of waste storage, transfer, and disposal are maintained in accordance with the requirements of 10 C.F.R Part 20 and the license.
k. Ask or observe how the licensee determines the radioactivity for each shipment.

l. Verify that the shipping container is not leaking.

(h) Emergency Preparedness.

The purpose is to verify that the licensee is implementing an adequate emergency response program. The Inspector should be familiar with the licensee's emergency response procedures. Inspection activities include:

(i) Discuss any incidents, spills, accidents, and emergencies since last inspection;
(ii) Review spill records and discuss what, if any, corrective actions were taken. In the case of spills, corrective actions include cleanup and mitigation, and steps taken to prevent a similar spill in the future;
(iii) Ask operators what actions will be taken in the case of spills or emergencies to verify their training and knowledge. Explore different scenarios;
(iv) Inspect the alarm system and ask how the operator would respond if the alarm goes off. Also, ask how the operators know an alarm is occurring when they are not in the control room or process buildings. Explore different scenarios;
(v) Ask how often the emergency showers, eye wash stations, and fire extinguishers are checked. Review records;
(vi) Ask about the frequency of emergency drills. Were there any emergency drills conducted since last inspection? Who were, or are normally, involved in the emergency drills?; and
(vii) Ask what emergency preparedness and response training is provided to workers. Review records.

(i) Laboratory Inspection.

At uranium recovery operations there will be a laboratory for chemical and radiometric analyses relating to production. In some instances, there are also analyses for bio-metric and/or environmental exposures. Inspection of those facilities include, but are not limited to the following activities:

(i) Survey contamination levels on the lab benches, hoods, storage areas, and places where people consistently work.
(ii) Examine where laboratory sources are stored and used.
(iii) Review the Quality Assurance Plan, if applicable, to ensure quality assurance objectives are being met.
(iv) Check chemical storage and waste storage areas. Do they have contaminated trash?
(v) Ask about handling of dried yellowcake. Is it performed under a hood or does the licensee use respiratory protection?
(vi) Spill Cleanup.

(vii) Ask to see comparisons to third party laboratory data, especially for UCL analyses.

(j) Decommissioning and Financial Assurance.

The inspector should review the decommissioning record to:

(i) Verify that record is being kept in accordance with 10 C.F.R Part 40;
(ii) Verify that the licensee is recording and keeping a record of spills or other unusual occurrences involving the spread of contamination in and around the facility, equipment or site; and
(iii) Verify that the record contains as-built drawings and modifications of structures and equipment in restricted areas where radioactive materials are used and/or stored.

The inspector should review the licensee's financial assurance submittal to:

(i) Verify whether it was provided to the URP; and
(ii) Verify whether radiological and environmental conditions at the facility have changed since the financial assurance instrument was submitted such that the document needs to be changed to address the new conditions. Examples of changes are radiological incidents such as spills or process changes. If the inspector identifies changes that may affect the financial assurance instrument he/she should notify the Uranium Program Manager of the deficiency.

Section 9. Site Tour and Area Survey

The inspector should take a site tour, especially if conducting the inspection topics related to radiation safety or facility operations. The site tour should include visits to areas that store, use, process, and dispose of the licensed materials. The purpose of the site tour is for the inspector to make an overall observation to determine the following:

(a) The licensed material is being handled and controlled safely and in good health physics practices;
(b) The ALARA program is being properly implemented;
(c) Verify, through observation, and by direct measurements, that the radiation levels are within the limits of 10 C.F.R Part 20, and are properly posted. Independent verifications of the licensee's measurements must be done with URP instruments. The inspector's instruments must be in current calibration and sourced checked before they leave the office;
(d) The inspector may ask the licensee to spot-check radiation levels in selected areas, using the licensee's own instrumentation;
(e) The licensed activities are being conducted in accordance with the statutes, URP's rules and regulations and the license;

(f) Verify that instruments and equipment are operable, having proper alarm settings (if applicable), and are calibrated and checked for appropriate response in accordance with license requirements and license procedures;
(g) Verify the following: that the facilities, including wellfields, impoundments, and the plant, conform to the description in the license application; that material receipt, use, and storage areas are secured; and that the licensee uses processes or other engineering controls to maintain doses as low as is reasonable achievable (ALARA);
(h) Workers and operators are familiar with, and are following, all applicable operating and radiation safety procedures;
(i) Site security is adequate; and
(j) Fences are adequate and in good order. Postings are in place.

In addition, during the site tour the inspector should take appropriate radiation surveys to identify areas with high radiation readings to verify that all radiation areas are properly posted. The site tour is also a good opportunity for the inspector to identify problems such as spills or uncontrolled radioactive materials, and to determine if there is any area that needs to be further investigated or remediated.

Section 10. Exit Meeting

At the end of the inspection, a formal exit meeting with the operations management personnel, RSO, and other invited staff shall be conducted. Prior to the exit meeting, all inspectors should meet and discuss/determine their preliminary findings in terms of "Apparent Violations," "Items of Concern," and "Recommendations." The purpose of the exit meeting is to formally inform the licensee of the inspectors' preliminary determination of the licensee's compliance status. The exit meeting will be led by the Lead Inspector. The following topics may be discussed:

(a) Acknowledgment of the licensee's cooperation and time;
(b) Discuss the licensee's good performance and acknowledge the licensee's efforts in operating the facility safely for workers and the public. Also acknowledge licensee efforts to meet regulations and the license;
(c) Discuss the inspection findings in terms of "Apparent Violations," "Items of Concern," and "Recommendations," if any, and discuss possible corrective actions;
(d) Discuss the licensee's questions/concerns regarding the inspection findings; and
(e) Discuss any follow-ups for the licensee.

Section 11. Post Inspection Activities

After an inspection, the inspector shall summarize the findings, with the appropriate URP supervisor. An inspection letter/report will be issued to document the occurrence of the inspection. This is especially important if there are, or are expected to be, controversial issues arising from the findings. After briefing management, an inspection report serves to summarize the activities that were investigated, areas of noncompliance, and open items for the next inspection. Inspection reports will be a narrative of the inspection items reviewed and will

conform to the narrative inspection report as outlined in Section 3 of URP-04. In general the report shall contain but is not limited to:

(a) Sufficient detail to describe the inspection that was conducted including operations observed to document the performance-based part of the inspection;
(b) The procedures used;
(c) The focus areas examined and compliance status of topics;
(d) The status of follow-up items involving prior enforcement or reported licensee events;
(e) Sufficient information to support cited violations, non-cited violations, and closed violations identified during a previous inspection;
(f) Enough information such that a different inspector should be able to use the inspection report in preparing for a subsequent inspection and determine whether corrective actions have been taken.

If several staff conducted the inspection, the lead inspector will designate who will draft the different sections of the report. The draft report is then sent to URP management to review and comment. The report is returned as either needing further action or as a final document. If further action is needed, the lead inspector makes the appropriate changes. Once the report is finalized, it is sent to the licensee and is made publicly available.

Section 12. Schedule for Inspection

Active ISR operations shall be inspected twice annually at a minimum. More specifically, each inspection topic should be conducted according to its minimum inspection frequency as shown in Table 1. Standby, inactive, or operations in restoration should be inspected annually with inspection topics modified to the level of risks presented by each scenario.

Occasionally the URP may perform a reactive inspection in response to an allegation or incident. Reactive inspections differ from routine inspections in that they are focused on a limited issue and are not within the scope of preparation for routine inspection. Determination of whether a reactive inspection is necessary will be made on a case by case basis by the LQD Administrator. Preparation for a reactive inspection includes reviewing specific documentation related to the incident under review and consultation with DEQ management on the best items to review before the inspection is conducted.

The interval between inspections may be extended (lengthened) on the basis of good license performance and the LQD Administrator's approval. The extension shall be valid only until the next inspection. The main consideration in extending the inspection interval should be evidence of well-managed and effective radiation safety and environmental protection program which shows a history of compliance. Specifically, the inspection interval may be extended for licensees meeting the following conditions:

1. The violations identified during the licensee's current and preceding inspections were of low safety significance and no more than two (2) low safety significant violations were found; and

2. The licensee has not had a significant program change since the preceding inspection. Significant program changes should relate to changes in the scope or type of operations, changes in the authorized materials or possession limits, changes in key personnel, or changes in location of use. (Note: Extensions should not be considered for licensees who have undergone significant program changes to ensure that the licensee can maintain adequate performance over the next inspection period.

Licensees which meet the above criteria may have their inspection interval extended as follows:

1. For producing ISR facilities, inspection intervals may be extended from 6 months to 1 year; and
2. For standby, inactive, or operations in restoration, inspection intervals may be extended from 1 year to 3 years.

The interval between inspections may be reduced (shortened) and the inspection conducted more frequently than specified on the basis of failure to satisfy URP inspection standards or poor performance during URP inspections. The main consideration in reducing the inspection interval should be evidence of moderate or severe problems in the licensee's radiation safety or environmental protection programs. Poor compliance history is one indicator of such problems, while lack of management involvement or control over the radiation safety program is another indicator. Any of the following conditions may warrant an increase in inspection frequency:

1. Issuance of an order or escalated enforcement in the most recent inspection;
2. An event requiring a reactive inspection;
3. Repetitive violations; or
4. A significant violation to health, safety, or the environment was identified in the most recent inspection.

The above list is not exhaustive. The inspection interval can and should be reduced for any other reason as determined by the LQD Administrator. If an escalated enforcement action has occurred for a particular licensee, a follow-up inspection should be scheduled and conducted within 6 months of the resolution of the enforcement action.

Inspections will cover the different inspection topics listed in Table 1. Column 4 in Table 1 contains lists of NRC inspection procedures, manual chapters, and guidance to help inspectors understand the items to cover under each inspection topic. The regulatory guidance is provided in Table 1 to help the inspector understand the material to be inspected, but not held as a URP standard, unless the guidance is incorporated into the specific license as a license condition.

Table 1. Inspection Frequency.

Inspection Topics	Minimum Inspection Frequency	Sections in this Document	Relevant ASTM Standards, Code of Federal Regulations (C.F.R), NRC Rules Inspection Procedures (IP), Manual Chapters (MC), Guidance (RG), URP Rules and Regulations, and WQD Rules and Regulations
On-Site Inspections (Certain Items may be Reviewed Off-site)			
Management Organization and Controls	Annually	8(a)	10 C.F.R 19.12, 10 C.F.R 20.1101(c), IP 88005, IP 89001, RG 8.31, and URP Chapter 8
ALARA Program	Annually	8(b)	10 C.F.R 20.1101(b), IP 87102, RG 8.10, RG 8.31
Section 8(c) Radiation Protection (10 C.F.R 20.1101(c))			
Occupational Exposure Control and Monitoring	Semiannually	8(c)(i)	10 C.F.R 19.13(b) and 20.1201-1204, 20.1207, 20.1501-1502, IP 83822, IP 83750, IP 83728, IP 83750, RG 8.7, RG 8.9, RG 8.10, RG 8.11, RG 8.13, RG 8.22, RG 8.25, RG 8.29, RG 8.30, RG 8.31, RG 8.34, RG 8.36, NUREG 1400, NUREG 4884
Respiratory Protection	Annually	8(c)(ii)	10 C.F.R 20.1703, RG 8.15, NUREG 0041
Surveys and Radiation Detection Equipment	Semiannually	8(c)(iii)	10 C.F.R 20.1203-1204, 20.1501, and 20.2103, IP 83726, RG 8.30, NUREG 1507
Security and Control of Licensed Material	Annually	8(c)(iv)	10 C.F.R 20.1601-1602, 20.1801, and 20.1802
Postings	Annually	8(c)(v)	10 C.F.R 19.11, 20.1902-1905, 20.1501-1502
Radiation Work Permits	Semiannually	8(c)(vi)	
Section 8(d) Public Dose and Environmental Protection			
Public Dose Inspections	Annually	8(d)(i)	IP 88045, RG 3.51, RG 3.59, RG 3.63, RG 4.14, NUREG 3332, NUREG 7213,
New Wellfield Operation	As Needed	8(d)(ii)	IP89001
Safe Wellfield Operation	Annualy	8(d)(iii)	IP89001
Pond Operation	Annually	8(d)(iv)	IP 89001, RG 3.11,
Water Disposal	Annually	8(d)(v)	IP 89001, WQD Chapter 27

Inspection Topics	Minimum Inspection Frequency	Sections in this Document	Relevant ASTM Standards, Code of Federal Regulations (C.F.R), NRC Rules Inspection Procedures (IP), Manual Chapters (MC), Guidance (RG), URP Rules and Regulations, and WQD Rules and Regulations
Section 8(d) Public Dose and Environmental Protection cont.			
Other Environmental Protection	Annually	8(d)	IP 88045, RG 3.56 RG 3.63, RG 4.14, RG 4.15, RG 8.37
Operation and Facilities	Semiannually	8(e)	MC 2641, IP 89001 IP87654 RG 8.30
Radioactive Waste Management	As Needed	8(f)	IP 88035
Transportation of RAM	Annually	8(g)	IP 86740, IP86750, IP 88035
Emergency Preparedness	As Needed	8(h)	IP 88050, IP 88055, IP 88064
Lab Inspections	As Needed	8(i)	
Financial Assurance	Semiannually	8(j)	
In-Office Reviews by Staff			
Effluent Release Reports	Semiannually		IP 87102, IP 88045, RG 3.56, RG 4.14, RG 4.15, RG 8.37
QA/QC Reports	As received		RG 4.14, RG 4.15
ALARA Reports	Annually		IP 87102, RG 8.10, RG 8.31, RG 8.37
Land Use Surveys, or Other Annual Reports	Annually		
Independent Auditor Reports	As received		

Wyoming Department of Environmental Quality
Land Quality Division
Uranium Recovery Program

Uranium Recovery Program Inspection Procedures (URP-002)
(NRC equivalent MC 2801)

URANIUM MILL AND 11e.(2) BYPRODUCT MATERIAL DISPOSAL SITE

AND FACILITY INSPECTION PROGRAM

Reviewed:_____ Date:_____

Approved:_____ Date:_____

Ryan Schierman, Uranium Recovery Program Manager

Effective Date:_____

Revision Number:_____

Section 1. Purpose

This Inspection Procedure establishes the safety inspection program for uranium mills and 11e.(2) byproduct material disposal sites and facilities (11e.(2) sites) licensed and regulated under 10 C.F.R Part 40, including mills authorized to take 11e.(2) byproduct material. The disposal sites include both commercial disposal facilities and sites associated with licensed uranium mills. Included in the program are inspection procedures related to all phases of activities: construction and pre-operations, operations, and reclamation/closure. Procedures presented cover those facilities licensed and regulated in their entirety by the Wyoming Department of Environmental Quality (WDEQ), Uranium Recovery Program (URP). The primary purpose of the inspection program is to obtain sufficient information through observations, personnel interviews, independent measurements, and review of facility records and procedures, to ascertain, in a timely manner, whether facility operations, and radiological and non-radiological programs regulated by WDEQ conform with regulatory requirements and the conditions of the applicable license. As a result, the inspection program determines that uranium mills and 11e.(2) sites are managed throughout their entire life cycle in a manner that provides protection from radioactivity to employees, members of the public, and the environment.

Section 2. Objectives.

(a) To establish general policy and priorities for inspection of uranium mills and 11e.(2) byproduct material disposal sites.

(b) To establish a uniform process for inspection of uranium mills and 11e.(2) byproduct material disposal sites.

(c) To define specific requirements for inspection of uranium mills and 11e.(2) byproduct material disposal sites.

Section 3. Scope

This Inspection Procedure has been developed to respond to needs for inspection procedures related to construction, pre-operation, operations, and reclamation/closure for sites licensed by WDEQ. It is noted that existing inspection procedures from other NRC programs can be applied, in full or in part, to many aspects of uranium mill and 11e.(2) byproduct material disposal site inspections, and that additional inspection procedures specific to disposal technology and on-site activity can be developed and employed incrementally, as needed. Tables 1 and 2 provide a listing of procedures that are currently available and include comments concerning their applicability. Minimum and normal frequencies of inspection are also listed in the tables. Adoption of the minimum frequency of inspection should be tailored to both the level of site activity and to the performance of the licensee.

Section 4. Program Description

4.1 General Description.

The inspection program for sites specifically licensed for 11e.(2) byproduct material disposal and for uranium mills has been divided into three parts. The parts are designed to be

responsive to the various inspection needs during the different phases of facility life: construction/pre-operation, operations, and reclamation/closure. Each phase of the inspection program varies with respect to applicable inspection procedures, inspection frequency, and degree to which a given procedure may be applied. The inspection programs for each phase are discussed in narrative form in Section 8. Tables 1 and 2 present inspection procedures relevant to the pre-operation, operations, and closure phases.

This Inspection Procedure identifies requirements for the inspection of the health, safety, and environmental aspects of licensee activities. The inspector should be completely familiar with the current regulatory requirements and commitments associated with the license. These include the comparable parts of Title 10, U.S. Code of Federal Regulations (C.F.R.), the license application, applicable guides, and other codes referenced in the license. In the case that NRC guidance documents are updated after a license or amendment is issued, the licensee is generally only committed to follow the original guidance. Thus, the particular revision of the guidance to which the licensee has been committed is of importance.

The scope of inspection procedures taken as a whole is not intended to be limited to only those elements discussed in the procedures. The descriptions and examples contained in the procedures are provided primarily for illustrative purposes, as examples of things that should be examined. Examination of other safety-significant activities not expressed or implied in a procedure is left to the individual inspector's judgment, with consideration of the relative degree of safety risk posed by the subject activity.

4.2 Program Adjustments.

This program provides the URP flexibility to adjust the frequencies and scope of inspections for different functional areas at a facility, as well as the periodicity of specific areas of inspections. (Suggested frequencies for various inspection procedures are specified in Tables 1 and 2. There is no maximum frequency expressed in Tables 1 and 2. It is expected that any level of effort above that specified as the normal frequency would be established at a level commensurate with whatever is needed to resolve identified problems and their importance to safety.) Periodic inspection interval adjustments should be based on inspection history, licensee performance and safety significance of findings, as delineated in Sections 4.2.1-4.2.2. Occasional adjustments may also occur in response to other events or activities, as determined by the LQD Administrator. A reasonable allowance for responding to these events or activities should be incorporated in the inspection plan for the facility. Necessary adjustments may be difficult to implement within the constraints imposed by limited inspection resources within the URP. In such cases, implementation may involve a shift in the focus of already scheduled inspection resources for the subject facility, or a shift in allocated inspection resources from other facilities in the region that have exhibited superior performance.

Inspections during the construction and pre-operational phase of a facility will be conducted on a case-by-case basis. Pre-operational inspections will be conducted at least once before startup of facility operations. The applicable inspection procedures for the construction/pre-operational phases are provided in Table 1.

Substantial adjustments in the planned inspection schedule for a facility (i.e., those that involve shifts in resources which may affect other facilities or result in exceeding a "normal" inspection frequency) should be coordinated with URP management.

4.2.1 Extension of Inspection Interval

The interval between inspections may be extended (lengthened) on the basis of good licensee performance. The main consideration in extending the inspection interval should be evidence of well-managed and effective radiation safety and environmental protection programs which show a history of compliance. Specifically, the inspection interval may be extended for licensees meeting the following conditions:

(a) The violations identified during the licensee's current and preceding inspections were of a low safety significance and no more than two violations per inspection were identified; and

(b) The licensee has not had a significant program change since the preceding inspection. Significant program changes should relate to changes in the scope or type of operations, changes in the authorized materials or possession limits, changes in key personnel, or changes in locations of use. (NOTE: Extension should not be considered for licensees who have undergone significant program changes to ensure the licensee can maintain adequate performance over the next inspection period.)

To document the extension in the interval between inspections, a note (e.g., a memorandum or section within the inspection report) should be written by the inspector, approved and signed by the inspector's immediate supervisor, and placed in the licensing file. The decision to extend the inspection should be made after each routine inspection. The Project Manager for the site should be informed and the master inspection plan updated accordingly.

4.2.2 Reduction of Inspection Interval

The interval between inspections may be reduced (shortened) and inspections conducted more frequently than specified in the priority system on the basis of failure to satisfy inspection standards and poor performance identified during inspections. The main consideration in reducing the inspection interval should be evidence of moderate to severe problems in the licensee's radiation safety or environmental protection programs. Poor compliance history is one indicator of such problems, while a lack of licensee management involvement or control over the radiation safety program is another indicator. Specifically, licensees that meet the following conditions shall be considered for reduction in inspection interval:

(a) Issuance of an Order or escalated enforcement on the most recent inspection; or

(b) An event requiring a reactive inspection; or

(c) Repetitive violations; or

(d) A significant violation to health, safety, or the environment identified in the most recent inspection.

The above list is not exhaustive. The inspection interval may be reduced for any other reason deemed pertinent by the LQD Administrator.

Licensees that meet the above criteria may have their inspection interval reduced by any length. For instance, licensee with a nominal annual inspection frequency and a poor performance record could be rescheduled for its next inspection in 6 months. The reduction may be valid only until the next inspection or until another time specified by the URP. However, the LQD Administrator shall consider the results of the next inspection when determining whether the reduced frequency should be continued, changed, or returned to normal.

(a) To document the reduction in the interval between inspections, a note (e.g., a memorandum or section within the inspection report) should be written by the inspector, approved and signed by the inspector's immediate supervisor, and placed in the licensing file; and

(b) The decision to reduce the inspection interval may be made at any time, but consideration to all affected parties should be given immediately after each routine inspection. The Project Manager for the site and the licensee should be informed, and the master inspection plan updated.

The inspection interval can and should be reduced for any other reason deemed pertinent by the Administrator. If escalated enforcement actions have taken place for a particular licensee, a follow-up inspection should be scheduled and conducted within six months of the enforcement action.

Section 5. Review of Events.

All inspections should include, as appropriate, a review of licensee reportable and non-reportable events that involve contamination, releases, equipment malfunctions, or other similar events that have generic significance. The review should cover corrective actions taken by the licensee and follow-up actions taken to prevent recurrence. In the case of reports received by WDEQ involving radiological health and safety, the URP is responsible for determining the seriousness of the reported incident and whether an immediate reactive inspection is necessary.

Non-reportable events are those determined by the licensee to fall outside criteria requiring them to be reported to WDEQ. Although, these events are not reported formally to WDEQ, licensees occasionally may contact the department informally to describe the event and explain the basis as to why it is considered a non-reportable event. Often, licensees are required, by the license conditions to maintain records of non-reportable events onsite. Non-reportable events should be examined during inspections to determine appropriate corrective actions, or investigated to prevent recurrence. Such events may relate to safety issues requiring referral or follow-up actions by the Occupational Safety and Health Administration, or the Mine Safety and Health Administration. These events may also relate to existing or potential operational concerns not otherwise reportable, such as biointrusion in disposal units, erosion or sloughing of trench walls, or uncontrolled wind erosion. Additional guidance on non-reportable events is contained in individual inspection procedures.

Section 6. Independent Inspection Effort.

Each inspector should spend some onsite inspection time performing independent inspections. The amount of time spent should be commensurate with the level of risk, the complexity of the facility, and the degree to which inspection resources have already been committed to significant safety and environmental issues that have already been identified in the facility. This effort may include more in-depth inspection in selected technical areas than that normally called for by the formal procedures. The major objective of this effort should be to gain increased understanding of potential safety and environmental hazards of particular activities of interest, such as those that may have been involved in a series of recent non-reportable events.

Comparison of the findings from this type of effort with the licensee's findings may uncover unresolved safety and environmental concerns, improper maintenance practices, and other problems that may not be discovered through other means. Discovered hazards outside the scope of WDEQ regulatory authority should be conveyed to the licensee at the exit interview (as set forth in URP-01), described to management during debriefing, and included in the formal inspection report. In cases where regulatory jurisdiction for the observed potential hazard is clear, the finding shall be reported to the responsible agency for action (i.e., another State Agency , Mine Safety and Health Administration, U.S. Environmental Protection Agency, etc.). In all cases where the finding involves a potential effect on radiological health and safety, the finding shall be followed-up during subsequent inspections until the licensee has resolved the concern. However, special follow-up inspections solely on the basis of Mine Safety and Health Administration issues are not required unless the potential hazard poses a radiological health or safety concern.

Section 7. Random Selection and Examination of Records.

Many of the inspection procedures normally require the inspector to select certain types of records at random for closer examination. However, random selection is not always required. The inspector may seek out certain records of interest when so inclined.

Random selection is a technique that recognizes the fact that URP does not have the resources to inspect every detail of a plant. The URP inspection program is predicated on the fact that the licensee is ultimately responsible for the safety of the licensed facility. Random selection, where specified in a procedure, allows the inspector to sample specific aspects of the licensee's safety and environmental program to be studied at a level of detail that would be impractical if exercised uniformly across the entire safety program. When random selection is specified in a procedure, the inspector should select records corresponding to activities that relate to the URP regulatory role, such as effluent monitoring records or groundwater restoration records. Also included should be records required to be retained for later decommissioning.

To reasonably verify that activities are conducted safely and in an environmentally acceptable manner, the inspector also should randomly select personnel for interviews. The extent and depth to which random selections or examinations are needed are left to the inspector's judgment, depending on how satisfactorily the licensee's operational and safety procedures are being followed.

Section 8. Inspection Topics During the Various Phases of a Facility’s Life

8.1 Inspection During the Construction and Pre-Operational Phase.

a. Purpose. The purpose of this instruction is to provide guidance for planning and conducting inspections during the construction/pre-operations phase of a facility. Activities encompassed during the construction/pre-operations phase of a uranium mill or disposal site include: disposal trench construction, liner placement, observation and verification of placement and compaction of cover materials, equipment use, fire protection program (equipment and training procedures), and compliance with applicable construction specifications requirements in accordance with applicable management controls and quality assurance procedures. Activities encompassed during start-up of a mill that has been on stand-by would include equipment operation/function and safety.

b. Implementation. This inspection program begins on issuance of the license, or license amendment to restart the mill, and continues until the site begins active receipt and disposal of waste, or processing of ore at a mill. Situations may arise in which inspection requirements specified for other phases may apply concurrently with those specified here for the pre-operational phase. For example, certain requirements may apply in the construction, pre-operational checks, and start-up of a major modification to the site.

The uranium mill or 11e.(2) byproduct material disposal site pre-operational inspection program is defined by selection from among the list of procedures in Table 1. The areas covered during an inspection need not be limited only to those elements discussed in the procedures, but may need to include examination of other activities not expressly delineated or covered in existing procedures. In such cases, the inspector must exercise good professional judgment in modifying the inspection and in identifying to URP management the possible need for development of supplemental guidance. Conformance with the principles of reducing radiation exposure to as low as is reasonably achievable (ALARA) should be a principal concern at all times.

For the normal inspection frequency, each procedure should be executed for each specific frequency. In practice, part or all of the procedural elements may need to be examined during each inspection visit.

During inspections emphasis should be placed on physical examinations, observation of conduct of operations, independent measurements, and personnel interviews. Attention should be directed toward the availability of written procedures, the degree to which they are being followed, and the state of training of on-site personnel. Effort should be concentrated on areas of perceived concern (highest safety risk) and site activities performed since the last inspection.

Review of records should involve only a sampling of those records important to safety of personnel and the general public. For example, if the organizational structure has not changed with respect to personnel and assigned functions and responsibilities, the inspector should not pursue the subject of organization in any detail, unless there is reason to believe that such is not the case. Discretion in such areas is left to the inspector's judgment.

c. Regulatory Considerations. The inspector should be familiar with current license requirements; previous inspection reports; applicable codes, standards and guides; and the following regulations:

10 C.F.R Part 19, "Notices, Instructions, and Reports to Workers: Inspection and Investigations."

10 C.F.R Part 20, "Standards for Protection against Radiation."

10 C.F.R Part 40, "Domestic Licensing of Source Material."

d. Guidance for Use of Inspection Procedures during the Pre-Operational Phase. The inspection procedures indicated in Table 1 for the construction/pre-operations phase are applicable to inspections conducted at uranium mills and 11e.(2) byproduct material disposal sites during construction/pre-operations. The inspection staff can determine the applicable elements of each procedure by reviewing the procedure, the facility license, and reports of previous inspections.

8.2 Inspection during the Operations Phase

a. Purpose. The purpose of this instruction is to provide guidance for planning and conducting inspections during the operations phase of the facility. Activities encompassed during the operations phase include receipt and handling of incoming 11e.(2) byproduct material, or the processing of ore and packaging of yellowcake; emplacement of the 11e.(2) byproduct material for disposal; radiation safety and environmental monitoring activities; and records management.

b. Implementation. This inspection program begins on issuance of the facility license, or a license amendment to allow a uranium mill on stand-by to restart, and continues until the facility ceases active receipt of materials and/or disposal of waste. Situations may arise in which inspection requirements specified for other phases may apply concurrently with those specified here for the operations phase. For example, certain requirements may apply in the operations, or start-up of a facility.

The uranium mill or 11e.(2) byproduct material disposal site operations inspection program is defined by selection from among the list of procedures in Table 2. The areas covered during an inspection need not be limited only to those elements discussed in the procedures, but may need to include examination of other activities not expressly delineated or covered in existing procedures. In such cases, the inspector must exercise good professional judgment in modifying the inspection and in identifying to the URP Headquarters the possible need for development of supplemental guidance. Conformance with the principles of ALARA should be a principal concern at all times.

For the normal inspection frequency, each procedure should be executed for each specific frequency. In practice, part or all of the procedural element may need to be examined during each inspection visit. Emphasis should be placed on physical examinations, observation of conduct of operations, independent measurements, and personnel interviews. Attention should be directed toward the availability of written procedures, the degree to which they are being followed, and the state of training of on-site personnel. Effort should be concentrated on areas of perceived concern (highest safety risk) and licensee activities conducted since the last inspection.

Review of records should otherwise involve only a sampling of those records important to safety of personnel and the general public. For example, if the organizational structure has not changed with respect to personnel and assigned functions and responsibilities, the inspector should not pursue the subject of organization in any detail, unless there is reason to believe that such is not the case. Discretion in such areas is left to the inspector's judgment.

c. Regulatory Considerations. The inspector should be familiar with current license requirements; previous inspection reports; applicable codes, standards and guides; and the following regulations:

- 10 C.F.R Part 19, "Notices, Instructions, and Reports to Workers: Inspection and Investigations."
- 10 C.F.R Part 20, "Standards for Protection against Radiation."
- 10 C.F.R Part 40, "Domestic Licensing of Source Material."

d. Guidance for Use of Inspection Procedures During Operations. The inspection procedures indicated in Table 2 for the Operations Phase are applicable to inspections conducted at uranium mills and 11e.(2) byproduct material disposal sites, including mills authorized for disposal of in-situ leach facility waste and other 11e.(2) byproduct material. The inspection staff can determine the applicable elements of each procedure by reviewing the procedure, the facility license, and reports of previous inspections. Inspectors should also refer to applicable portions of NRC Regulatory Guides 4.14, 8.22, and 8.30, for details.

8.3 Inspection During the Reclamation/Closure Phase

a. Purpose. The purpose of this instruction is to provide guidance for planning and conducting inspections during the period of reclamation/closure of a uranium mill site or 11e.(2) byproduct material disposal site. In some cases, as specifically allowed or required by license condition, some closure activities may occur for some parts of a facility during the operations phase. The purpose of the inspection is to verify, by field observations and review of licensee records, that decontamination of soil, sediment, surface waters, and ground-water, as well as reclamation of the disposal cell, are being performed in accordance with URP-approved plans.

b. Implementation. This program is initiated when the licensee begins implementation of any portion of the approved reclamation/decommissioning plan. The foundation for planning and scheduling inspections will thus be the licensee's progress in implementing the reclamation plan (construction schedule). The criteria for inspections will be license conditions and applicable regulations, some of which will directly address reclamation activities. In many cases, portions of the reclamation plan may be implemented for part of a site while active operations continue elsewhere on site. In these cases, the appropriate portions of this program should be implemented in conjunction with the operations inspection program. The reclamation plan itself, as amended during site operation and approved by URP, should be reviewed to determine if procedural or scheduling modifications are necessary to enable planning of an efficient inspection program. The inspection program continues in effect until the licensee has implemented all elements

of the reclamation plan, the license is terminated, and the title to the land is transferred to the State or the U.S. Department of Energy for long-term surveillance and maintenance.

The 11e.(2) byproduct material disposal site, or uranium mill reclamation and decommissioning inspection program is also defined by selection from among the list of procedures in Table 2. The areas covered during an inspection need not be limited only to those elements discussed in the procedures, but may need to include examination of other activities not expressly delineated or covered in existing procedures. In such cases, the inspector must exercise good professional judgment in modifying the inspection and in identifying to URP management the possible need for development of supplemental guidance. Conformance with the principles of ALARA should be a principal concern at all times.

For inspections during site remediation/closure (includes licensee performing cleanup verification measurements), each procedure should be executed for each specific frequency. In practice, part or all of the procedural element may need to be examined during each inspection visit. Emphasis should be placed on physical examinations, observation of the conduct of operations, limited independent measurements (e.g., split samples), and personnel interviews. Attention should be directed toward the availability of the licensee's written procedures, the degree to which they are being followed, and the state of training of on-site personnel. Effort should be concentrated on areas of perceived concern. Discretion in such areas is left to the inspector's judgment in consultation with URP staff (Project Manager, technical reviewers).

A confirmatory survey may be performed as an audit of the licensee's final survey results to independently confirm that the report is accurate and representative of site conditions, but is only necessary if there is significant doubt regarding the licensee's final survey results. A confirmatory survey will be performed if any of the following applies to decommissioning of the site:

1. Repeated violations, with the inclusion of a "management paragraph;"
2. Issuance of an order;
3. Failure to take short-term corrective measures;
4. An event requiring a reactive inspection;
5. Limited financial and technical viability of the licensee; and
6. Significant problems identified with the reclamation plan or final survey data.

c. Regulatory Considerations. The inspector should be especially familiar with current license requirements; previous inspection reports; applicable codes, standards and guides; and the following regulations:

- 10 C.F.R Part 20, "Standards for Protection against Radiation."
- 10 C.F.R Part 40, "Domestic Licensing of Source Material."

- 10 C.F.R Part 61.82, "Commission Inspection of Land Disposal Facilities (Commercial Disposal Only)."

d. Guidance for Use of Inspection Procedures During Closure. The inspection procedures indicated in Table 2 are applicable to inspections conducted at 11e.(2) byproduct material disposal sites, or uranium mills during closure. The inspection staff can determine the applicable elements of each procedure by reviewing the procedure, the facility license, and the licensee's closure and reclamation plan.

Attachments:

Table 1 Inspection Procedures Applicable to Pre-Operational Inspection of a Uranium Mill or 11e.(2) Byproduct Material Disposal Site

Table 2 Inspection Procedures Applicable to Inspection of a Uranium Mill or 11e.(2) Byproduct Material Disposal Site during Operations and Closure

TABLE 1

INSPECTION PROCEDURES APPLICABLE TO PRE-OPERATIONAL INSPECTION OF A URANIUM MILL OR 11e.(2) BYPRODUCT MATERIAL DISPOSAL SITE

Procedure Number	Procedure Title	Inspection Frequency		Applicability of Procedure to the Inspection
		Minimum	Normal	
88001	On-site Construction	Annual	Key constr. milestones	Applicable to the inspection of engineering and construction.
88005	Management Organization and Controls	Annual	Annual	Generic Procedure applicable.
88045	Environmental Protection	Annual	Semiannual	License will specify offsite monitoring and sample locations, frequencies and applicable limits on levels and concentrations of radioactivity.
89001	In-situ Leach (ISL) facilities	Annual	Semiannual	Generic procedure applicable to uranium mills and in-situ leach facilities.
92701	Follow-up	As Necessary	As Necessary	Generic procedure applicable.
92703	Follow-up of Confirmatory Action Letters	As Necessary	As Necessary	Generic procedure applicable.

TABLE 2

INSPECTION PROCEDURES APPLICABLE TO INSPECTION OF A URANIUM MILL SITE OR 11e.(2) BYPRODUCT MATERIAL DISPOSAL SITE DURING OPERATIONS AND CLOSURE

Procedure Number	Procedure Title	Inspection Frequency		Applicability of the Procedure
		Minimum	Normal	
83822	Radiation Protection	Annual	Semiannual	This procedure is applicable in its entirety.
86740	Inspection of Transportation Activities	Annual	Semiannual	This procedure should be used to confirm compliance for yellowcake or 11e.(2) shipments.
87104	Decommissioning Inspection Procedure	As Necessary	As Necessary	Used to ensure licensed decommissioning are being conducted in a manner that will protect health and safety of the workers and the general public.
88001	On-site Construction	Annual	Semiannual	This procedure is for the engineering and construction aspects of a disposal cell.
88005	Management Organization and Controls	Annual	Annual	This procedure is generally applicable.
88010	Operator Training/Retraining	Annual	Biennial	This procedure is applicable to mill and disposal sites.
88025	Maintenance and Surveillance Testing	Annual	Semiannual	Generally applicable.
88035	Radioactive Waste Management	Annual	Semiannual	Sections 02.01 - 02.06 are generally applicable.

88045	Environmental Protection	Annual	Semiannual	This procedure is applicable in its entirety.
88050	Emergency Preparedness	Biennial	Biennial	This procedure is generally applicable. Discretion is required regarding the degree to which all requirements are inspected against.
89001	In-situ Leach Facilities	Annual	Semiannual	Applicable to the operating aspects generic to uranium mills and ISL facilities.
92701	Follow-up	As Necessary	As Necessary	Generally Applicable.
90703	Follow-up of Confirmatory Action Letters	As Necessary	As Necessary	Generally Applicable.
93001	OSHA Interface Activities	As Necessary	As Necessary	Generally Applicable.

Wyoming Department of Environmental Quality
Land Quality Division
Uranium Recovery Program

Uranium Recovery Program Inspection Procedures (URP-03)
(NRC equivalent IP 87654)

URANIUM MILL, IN-SITU LEACH URANIUM RECOVERY, AND
11e.(2) BYPRODUCT MATERIAL DISPOSAL
SITE DECOMMISSIONING INSPECTION

Reviewed:_____ Date:_____

Approved:_____ Date:_____

Ryan Schierman, Uranium Recovery Program Manager

Effective Date_____

Revision Number_____

Section 1. Inspection Objectives

The objective of this inspection procedure is to determine if licensed decommissioning programs are being conducted in accordance with Wyoming Department of Environmental Quality (WDEQ), Uranium Recovery Program (URP) requirements, including decommissioning rules and guidelines, and the approved decommissioning plan. This procedure should be used in conjunction with NRC Inspection Procedure 88104 which provides details specific to decommissioning uranium mill sites. This procedure is also applicable to in-situ leach uranium recover sites and 11e.(2) byproduct disposal sites licensed by the URP that are not associated with a uranium mill. However, the inspector should confirm the regulatory requirements for the site as indicated in the site license.

Section 2. Inspection Requirements

A determination of compliance with program requirements will be based on direct observation of work activities, interviews with workers, demonstrations by workers performing tasks regulated by the URP, independent measurements of radiological conditions at the facility, and review of licensee records. The inspector should refer to NRC Inspection Manual Chapters (IMCs) 2602 and 2801 for general policies and guidance.

The scope of the inspection of licensed activities will be commensurate with the scope and status of the licensee's decommissioning program and with previous inspection efforts. During decommissioning most facility buildings are buried in a mill tailings disposal cell, but some buildings and structures may remain on site or be moved elsewhere.

A primary decommissioning activity to be addressed is soil cleanup and cleanup verification (final status survey) to demonstrate compliance with Criterion 6(6) of 10 C.F.R Part 40, Appendix A. If the site final decommissioning plan was approved after June 11, 1999, the radium benchmark dose approach should be used to determine cleanup criteria for residual radiation in soil and building surface activity (NUREG 1620, Appendix H). However, inspection of the implementation of other radiological decommissioning requirements in Criterion 6, such as measurement of radon flux and gamma levels from the disposal cell cover, may be necessary and should be coordinated with the Departments Health Physicist. Groundwater compliance will be evaluated against Criteria 5B, 5C, 5D, 5E, 5G, and 13. Surface reclamation compliance (including disposal cell construction) will be evaluated against Criteria 4 and 6, and is discussed in NRC Inspection Procedure 88001.

Applicable portions of 10 C.F.R Part 40.42 such as the requirements for timely decommissioning may need to be addressed, therefore the URP Project Manager should be consulted when the site inspection plan is being developed.

This inspection procedure should be used as a checklist when developing a site-specific decommissioning inspection plan. The decommissioning inspection is not intended to duplicate the normal inspection for management organization and controls, radiation protection, radioactive waste management, and environmental monitoring, but to emphasize observation of key decommissioning activities being performed. If possible, implementation of this procedure should be initiated early in the decommissioning phase, to identify any program deficiencies and to gain confidence in the licensee's performance.

2.1 Preparation. The inspector should allow adequate time to prepare for the inspection. Preparation will include reviewing documents, making travel arrangements, coordinating with appropriate staff, notifying appropriate agencies, and selecting necessary equipment. In particular, the inspector shall identify whether any license amendments have been issued since the last inspection, or whether the licensee has informed URP of any major program changes since the last inspection. The inspector shall also review any event files to determine if the licensee had any incidents or events since the last inspection.

2.2 Entrance Briefing. When the inspector arrives at the licensee's facility, he/she will inform an available senior management facility representative of the purpose and scope of the inspection.

2.3 General Overview

a. Organization. The inspector should interview cognizant licensee representatives about the current organization of the decommissioning program. Examine the licensee's organization with respect to changes that have occurred in personnel, functions, responsibilities and authorities since the previous inspection. Identify the reporting relationship and management structure between the licensee's executive management and the Radiation Safety Officer (RSO).

b. Scope of Program. The inspector should interview cognizant personnel to determine the scope of decommissioning activities, site status, staff size, etc.

c. Management Oversight. In the course of interviewing cognizant personnel, the inspector should determine if management oversight is sufficient to provide the licensee staff with adequate resources and authority to administer the decommissioning program. The inspector should conduct the following analysis:

    1. RSO - Determine whether the RSO has sufficient authority, and fulfills the appropriate duties commensurate with the size and scope of decommissioning activities.

    2. Audits - Verify that audits are performed as required. Verify that the results of the audit are reviewed and addressed as they relate to decommissioning.

    3. Determine that individuals who perform and/or supervise licensed activities are qualified and perform at an appropriate level of supervision, as required by the license or URP's rules.

d. Decommissioning Activities. The inspection should be scheduled so that decommissioning activities can be observed, unless it is to be the final decommissioning inspection (usually after the Final Status Survey Report is submitted and reviewed). Licensee decommissioning staff should be interviewed, and relevant records on decommissioning activities should be reviewed.

e. Site Orientation Tour. A brief site tour should be conducted. General observations should be noted regarding the condition of the facility and the decommissioning activities being performed.

2.4 Equipment and Procedures. Review the equipment and procedures used for decommissioning the site to determine if appropriate and approved equipment and methods were followed.

2.5 Final Status Survey. Verify the accuracy and reliability of the licensee's final survey data by reviewing the methods used and the final data, including Quality Assurance/Quality Control data.

2.6 Quality Assurance/Quality Control. Verify the adequacy of the licensee's quality assurance and control program.

2.7 Data Reduction and Management. Verify the methods in which field data is documented and processed.

2.8 Personnel Training. Verify that appropriate training and instructions were/are given. Through discussions with workers, verify that licensee personnel understand and implement the established decommissioning procedures.

2.9 Confirmatory Survey. The survey by the inspector should include gamma scans (and alpha scans if applicable) and soil analysis using methods similar to those approved for use by the licensee. The inspector's survey data is used as an indication of whether or not the licensee properly implemented the approved procedures and complied with the decommissioning criteria.

2.10 Groundwater. Verify that the groundwater monitoring and/or the corrective action program is being conducted (1) in compliance with Appendix A of 10 C.F.R Part 40 and (2) as required by applicable license conditions. Verify that the ponds are being monitored for leakage into the groundwater as required by applicable license conditions.

2.11 Exit Meeting. When the inspection is over, there should be an exit meeting with the most senior licensee representative present, to discuss the preliminary inspection findings.

2.12 Post-Inspection Actions. After the inspection, the inspector shall summarize the findings with his/her supervisor. The inspector shall also contact URP management when any pertinent issues are raised during the inspection, when inspection findings impact any licensing actions, or to give feedback on how the licensee has addressed recent licensing actions.

The inspection report should document what activities were observed, summarize the interviews with licensee personnel, and clearly indicate the evaluation of the licensee's decommissioning program.

Section 3. Inspection Guidance

3.1 Preparation. Before the inspection, the inspector should review the following:

a. *Operating History*. Review the history of each license to identify what types of work activities were performed, the types of buildings that existed, and the geographical location of each. Review the results of past operational radiological surveys that were used to demonstrate radiological control of the site/facility.

b. *Waste Disposal Practices and Radioactivity Releases*. Verify waste disposal outside the tailings cell. Consider the potential for, or evidence of, contamination from spills, or other releases of radioactive material (such as haul routes) to compare with the soil cleanup boundary and cleanup standards.

c. *Environmental Monitoring Data*. Verify operational soil sampling, airborne emissions, and ground-water monitoring data, specifically for evidence of radiological contamination. Verify effectiveness of effluent controls, particularly during drying and packaging operations, and when air was exhausted from the yellowcake stack. Determine that the area where airborne contamination would likely be deposited has been investigated for residual contamination.

d. *Results of Previous Surveys*. Verify the results of scoping, characterization, and remedial action support (excavation control) surveys performed by the licensee. Review the results of previous surveys for justification of the classification of mill site areas (e.g., mill site boundaries versus windblown areas). In particular, review data for the areas adjacent to the remediation of windblown contamination.

e. *Remedial Actions*. Review the specific procedures that were used to decontaminate the process facilities and/or land areas. Consider the potential for incomplete remediation based on these remedial action techniques, particularly the potential for the remedial actions to produce areas of localized contamination within verification grids that were not represented in the gamma scan average value. Determine if the licensee has identified the need to remediate radionuclides other than radium-226 (Ra-226),(e.g., beneath acidic raffinate ponds) where thorium-230 (Th-230) could migrate farther than Ra-226 or where uranium ore residue or yellowcake contamination could be located.

f. *Guidelines Established*. Review the guidelines that the licensee is using for indoor and outdoor areas and verify how the stated guidelines are being implemented ;(e.g., use of surrogate measurements, presence of multiple contaminants, averaging conditions, and hot spots).

g. *Records*. Review the site's previous inspection history, license conditions, and licensee's submittals concerning decommissioning, and the Technical Evaluation Reports for the related amendments. Be aware of follow-up inspection items, commitments made by the licensee, and assumptions or conclusions made by licensing staff related to decommissioning.

h. *Background Reference Areas*. Identify the value that URP approved as the site Ra-226 soil background. Determine if any recent information might require a review of the background value to determine that its use for soil cleanup is adequate to protect long-term health and safety (e.g., soil cleanup extended into background locations).

3.2 Entrance Briefing. No specific guidance required.

3.3 General Overview. No specific guidance required.

3.4 Equipment and Procedures. The inspector shall verify the gamma surveys done by the licensee by reviewing the following:

a. *Instruments*. Review the basis for the selection of instruments (e.g., based on potential contaminants and their associated radiations, types of media (soil, sludge, etc.) to be verified, and detection sensitivities). Typically, sodium iodide (NaI) scintillation detectors are used for land area surveys.

b. *Sensitivity*. Review documentation pertaining to instrumentation sensitivity, particularly licensee statements to the effect that instrumentation will be sufficient to detect radiological contamination. The detection sensitivity should be below the appropriate guideline values. Also, verify the instrument scan sensitivity for exterior scan surveys (NUREG-1575, Section 6.7). Check the scan sensitivity in terms of the gamma soil cleanup guideline.

c. *Gamma-Radium Correlation*. Confirm that the licensee checked the correlation of Ra-226 concentration to gamma levels during verification, and that an acceptable correlation was obtained to support the gamma guideline value.

d. *Methods.* Verify the methods/procedures for exposure rate measurements and gamma scans, unless these were reviewed with the reclamation and decommissioning plan. If possible, observe if the measurements and scans are performed according to the procedures and good health physics practices, such that reliable data are produced.

e. *Calibration*. Verify the procedures for instrument calibration; (e.g., use of appropriate radionuclide calibration sources, source geometry, and appropriate consideration of environmental conditions). Check the calibration date of survey meters.

f. *Check-out*. Review the operational check-out of survey instrumentation. Verify frequency of operational checks (both to calibration source and background) and if instrument response fell within predetermined acceptance criteria.

The inspector should verify the surface activity measurements of buildings, structures and equipment by reviewing the following:

a. *Instruments*. Review the basis for the selection of instruments; (e.g., based on potential contaminants and their associated radiations, surface types to be verified, and detection sensitivities). Typically Geiger Muller, gas proportional, or zinc sulfide detectors are used for building surface contamination surveys. Verify the energy dependence of the measurement instrument and determine if the licensee has appropriately addressed this issue. Remember that beta detectors are more sensitive to "old" yellowcake than alpha detectors.

b. *Sensitivity*. Review documentation pertaining to instrumentation sensitivity, particularly licensee statements to the effect that instrumentation will be sufficient to detect radiological contamination. The detection sensitivity should be below the appropriate

guideline values. Verify the instrument scan sensitivity for both the interior and exterior scan surveys of building surfaces (NUREG-1575, Section 6.7).

c. *Equations*. Review the licensee's minimum detectable contamination equation for direct measurements on building surfaces and the conversion of counts to activity (should use the 4π efficiency factor).

d. *Calibration*. Verify the procedures for instrument calibration, e.g., appropriate radionuclide calibration sources, source geometry, and appropriate consideration of surface and environmental conditions.

e. *Methods*. Verify the method used for exposure rate measurements, unless it was part of the Reclamation/Decommissioning Plan. Normally, measurements are done 1 meter (3 feet) from the floor and at least 1 meter (3 feet) from a corner. Radiation measurements should also be taken where contamination is most likely to occur.

f. *Check-out*. Review the operational check-out of survey instrumentation. Verify frequency of operational checks (both to calibration source and background) and if instrument response fell within predetermined acceptance criteria.

3.5 Final Status Survey. The inspector should verify the level of survey coverage for structures and land areas, based on the area classification (e.g., mill site or windblown area, affected or unaffected). The inspector should review the licensee's procedures for performing surface activity measurements and scans on building surfaces, and also for performing soil sampling and ground-surface gamma scans. When possible, the inspector should observe implementation of the procedures to determine if the procedure is followed and performed in a manner reflecting good health physics practices. In particular, review the following:

a. *Measurements*. Determine whether the type, location, and number of measurements and/or samples per area are sufficient to provide a good representation of the radiological contamination. NUREG-1575 should be consulted for general guidance.

b. *Boundaries.* Ensure that the boundaries of the contaminated soil areas have been appropriately determined (review gamma data and perform spot-check gamma scans), and that any potential subsurface radioactive material deposits have been addressed.

c. *Follow-up.* Determine the use of investigation levels for measurement results and if the licensee performed appropriate follow-up actions. For example, soil samples should be collected if the NaI scintillation detector readings exceed a specified investigation level.

d. *Soil Sampling and Analytical Procedures*. Verify the licensee's sample collection and preparation techniques (e.g., mixing, drying, geometries used for gamma spectrometry on soil samples, ingrowth period for Ra-226 progeny, etc.). Review the licensee's analytical procedures for radiological analyses, particularly the analysis of soil samples by gamma spectrometry. If a contract laboratory was used, those procedures should be available for review, including sample chain-of-custody procedures.

e. *Instruments*. Review the protocol the licensee uses to interpret the gamma spectrometry results, particularly the radionuclide peaks used to identify various contaminants. Review for drift checks, energy calibration, control charts, duplicate sample counts, split samples with outside laboratory, etc. Determine whether the survey meters and gamma spectrometer are maintained and operated in accordance with the manufacturer's recommendations and good health physics practices.

f. *Replaced Data*. Review survey results for those areas where additional investigations have been conducted. If initial survey data have been replaced or supplemented as a result of the investigation, ensure that the replacement data are annotated as such. The annotation is intended to alert the reviewer that the initial data have been replaced.

g. *Survey Data*. Select a portion of the completed survey data and review data for compliance with procedures and final survey plan. Review the documentation for scan surveys to determine how the licensee identified and investigated any elevated readings during the scan survey. Review survey results for specific processing areas that have been remediated, including buried raffinate lines, evaporation ponds, etc. Determine if results demonstrate compliance with guidelines and whether any modifications to the general survey approach were necessary.

3.6 Quality Assurance/Quality Control

a. *Laboratory*. Review the licensee's on-site laboratory and/or licensee's contracted off-site laboratory quality assurance/quality control procedures, including duplicates, blanks, and matrix spikes. Determine the frequency of analysis for each of the quality control (QC) checks. Determine whether the laboratory participates in cross-check of performance evaluation programs, such as those offered by the Department of Energy Environmental Monitoring Laboratory and the U.S. Environmental Protection Agency.

b. *Final Data*. Review the final status survey report data and discuss with the health physicists to ensure that the items listed below are adequately addressed either in the report or in the licensee's records:

1. QC sampling and direct measurements, along with associated acceptance criteria and corrective actions, are adequate in number and location.

2. Confirmation of radiation survey measurement data quality assessment to determine adequacy of the collected data, for the intended use. Examples of data quality assessment include verification that the collected data are applicable to the statistical model used to reduce the data, and other data quality indicators, including completeness, comparability, representativeness, precision, and accuracy.

3. Confirmation of computer calculations by manual calculation.

3.7 Data Reduction and Management

a. *Program Review*. Perform a program review to determine if the licensee has set up a data reduction process with criteria stated in procedures, and if the licensee's computer software has data reduction features in the analysis, counting, and data reporting.

b. *Spot Check*. Select a completed survey data package, the data reduction procedure, and verify implementation by performing the data reduction process under the direction of the licensee.

1. Trace the path of data from their generation in the field or laboratory to their final use.

2. Review any checklist forms used for preventing loss of data during data reduction.

3. Ensure that data reduction analysis information is reflected in the final survey results.

3.8 Personnel Training. Review the qualifications and training for radiation technicians and other decommissioning project personnel. If possible, question technicians about their knowledge of procedures and the frequency or detail of their training.

3.9 Confirmatory Survey. Determine the need for a confirmatory survey based on the criteria in URP Inspection Procedure URP-002. A confirmatory survey by the inspector and/or WDEQ contractor should only be necessary if there is significant doubt regarding the licensee's final survey results. The extent of the survey (e.g., gamma survey and soil analysis) should be determined with input from the Department's Health Physicist who reviewed the Final Survey Status Report. Confirmatory analysis of archived soil samples may be necessary.

03.10 Groundwater. Verify that groundwater quality data were collected at the correct locations and frequency, as required by the license (URP-approved radiological environmental monitoring program), were analyzed for the right constituents, and were verified to make a determination against established detection or compliance standards, as appropriate. Confirm that if groundwater quality data indicated detection or compliance standards were exceeded (including compliance standards set by Alternative Concentration Limits), that the licensee appropriately notified the URP and took appropriate sampling and, if necessary, corrective actions. Visually verify that compliance wells are correctly located with respect to the most recent URP-approved locations. If applicable, verify that groundwater corrective action programs were conducted in a timely manner. Also, verify that wells and boreholes that must be sealed under the approved reclamation plan, were correctly sealed and abandoned.

Visually verify that: (1) there are no failures or breaks in impoundment embankments, (2) that there are no obvious tears in impoundment liners, and (3) that there are no springs and seeps

around impoundment embankments. If applicable, visually verify that the impoundment leak-detection and impoundment water-level monitoring systems are in place and operational. Verify that the licensee is conducting the appropriate level of visual inspections of impoundment integrity. If applicable, verify that the impoundment leak detection system is being monitored at an appropriate frequency and for the correct indicator parameters. Verify that appropriate monitoring, cleanup, corrective actions, and regulatory notifications were taken when impoundment fluids were found in the impoundment groundwater leak-detection system.

03.11 Exit Meeting. When the inspection is over, there should be an exit meeting with the most senior licensee representative present at the facility. If a senior management representative is unavailable for the exit meeting, the inspector may hold a preliminary exit meeting with appropriate staff on site.

03.12 Post Inspection Actions. The inspector will review inspection findings with his or her supervisor and discuss violations, items of concern, and unresolved items in sufficient depth for management to make appropriate decisions regarding enforcement actions, referral to other State and Federal agencies, and decisions on the scheduling of future inspections of the licensee's facility.

The inspector should also discuss inspection findings with the appropriate management to inform the staff about how the licensee has addressed (or failed to address) special license amendments or recent licensing actions.

Section 4 REFERENCES

The following NRC IMCs and related IPs should be used for guidance, in part, for the decommissioning inspection:

IMC 1230 "Quality Assurance Program for Radiological Confirmatory Measurements," 10/1/83.

IMC 2602 "Decommissioning Inspection Program for Fuel Cycle Facilities and Materials Licensees," 6/4/97.

IMC 2605 "Decommissioning Procedures for Fuel Cycle and Materials Licensees," 11/12/96.

IMC 2801 "Uranium Mill and 11e.(2) Byproduct Material Disposal Site and Facility Inspection Program," 8/25/00.

IP 88001 On-Site Construction, 4/15/94.

IP 88005 Management Organization Controls, 9/5/06.

IP 88030 Radiation Protection, 3/6/14.

IP 88035 Radioactive Waste Processing, Handling, Storage, and Transportation, 2/7/14.

IP 88045 Effluent Control and Environmental Monitoring, 2/7/14.

IP 88104 "Decommissioning Inspection Procedure for Fuel Cycle Facilities," 6/4/97.

Applicable portions of the following NRC documents should be used for guidance:

NUREG-1507 "Minimum Detectable Concentrations with Typical Radiation Survey Instruments for Various Contaminants and Field Conditions," June 1998.

NUREG-1569 Revision 1, Standard Review Plan for In-Situ Leach Uranium Extraction License Applications, Draft Report for Comment, January 2002.

NUREG-1575 "Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)" Revision 1, June 2000.

NUREG-1620 Revision 1, Standard Review Plan for the Review of a Reclamation Plan for Mill Tailings Sites Under Title II of the Uranium Mill Tailings Radiation Control Act, Draft Report for Comment, January 2002 (Section 5.2).

NUREG-1727 NMSS Decommissioning Standard Review Plan, September 2000 (Appendix D, ALARA).

NUREG-1757 Consolidated Decommissioning Guidance, Vol. 1 Decommissioning Process for Materials Licensees (September 2006), Vol. 2 Characterization, Survey, and Determination of Radiological Criteria (September 2006), and Vol. 3 Financial Assurance, Recordkeeping, and Timeliness (February 2012).

Wyoming Department of Environmental Quality

Land Quality Division

Uranium Recovery Program

Uranium Recovery Program Inspection Procedures (URP-04)

TECHNICAL QUALITY OF INSPECTIONS AND INSPECTION REPORTS (Section 4.4.2 of NRC Handbook)

Reviewed:_____ Date:_____

Approved:_____ Date:_____

Ryan Schierman, Uranium Recovery Program Manager

Effective Date_____

Revision Number_____

Section 1. Purpose

This procedure establishes the quality assurance measures taken by the program to ensure the accuracy and integrity of the inspection process.

Section 2. Objectives

(a) To list measures taken to ensure that the inspection process is accurate and uniform.
(b) To inform inspectors of the quality assurance measures taken by the Program.

Section 3. Quality Assurance of Inspection and Inspection Reports.

To ensure the quality of inspections for the URP, the following measures must be followed:

(a) Inspectors will be required to obtain the training as listed in the formal qualification plan for inspectors;
(b) When performing inspections follow the inspection procedures that are pertinent to the area of inspection;
(c) Inspection Reports will follow a narrative format;
(d) Inspection Reports will follow administrative procedures which include supervisory review of all inspection reports;
(e) During team inspection the Lead Inspector is responsible for drafting the inspection report, but team members should peer review the report for accuracy of content before supervisory review; and
(f) Periodic inspection evaluations will be used to ensure the quality of inspections. The form for inspection evaluations is contained as an attachment to this Inspection Procedure.

Section 1.0 Purpose of Inspection Reports for Uranium Recovery Operations

This Inspection Procedure summarizes the format for narrative reports following inspections of uranium recovery operations licensed and regulated under the Wyoming Department of Environmental Quality (WDEQ), Uranium Recovery Program (URP) rules and regulations. Inspection Procedures for inspection of licensed materials facilities in Wyoming are contained in URP guidance titled *Inspection Procedures for Uranium Recovery Facilities*. The purpose of the narrative inspection report is to summarize inspection findings, including violations, items of concern, unresolved items, and decisions regarding future inspections.

If violations are identified, the inspector must provide sufficient detail for the reader to understand what requirements were violated, how the requirements were violated, who violated the requirements, and when the requirements were violated. Additionally, the inspection report should be used to describe what procedures or activities were observed and/or demonstrated by the licensee during the inspection, and any items of concern that were not cited as a violation of regulatory requirements.

The inspection report should also address any violations or items of concern that were previously discussed in the exit meeting following the inspection visit. Finally, the inspection report should be written after consultation with the appropriate program supervisor, particularly if violations were identified during the inspection.

Section 2.0 Format of the Inspection Report Cover Letter

The inspection report cover letter should be written on WDEQ LQD's letterhead, and should include the following:

1. Date;
2. Licensee name and address;
3. Subject/Reference line: “URP Inspection Report”, Facility name, Company name, location including county in Wyoming, and license number for the facility;
4. Greeting;
5. Body of text;
    - Type of Inspection (announced or unannounced);
    - Date(s) of inspection;
    - Facility Name, location (county, Wyoming);
    - Name(s) of URP inspector(s), titles;
    - Findings of the inspection;
    - Reference to any notices of violation (NOVs) or particular areas of concern;
    - Reference to attachments/enclosures such as the main inspection report, supportive previous inspection information or documents, etc;
    - Requirements for response from the licensee and timeframe for response;
    - Any URP rules and regulations, statutes, or license conditions applicable to the situation; and

- Contact information for URP staff

6. Enclosures; and
7. Contacts who have been "cc'd". Please "cc" relevant State and/or Federal agencies with whom the URP has Memoranda of Understanding/Memoranda of Agreement (MOUs/MOAs)

Section 3.0 Format of the Body of the Inspection Report

The information which follows concerning the body of the inspection report has been modeled after historical NRC inspection reports of licensed facilities in Wyoming. In general, the inspection report should contain the following items:

3.1 Executive Summary

The executive summary provides a broad-scope summary of the results of the inspection. The heading of the summary should include the name of the facility, the URP license number, the date(s) of the inspection, and the name(s) and title(s) of the URP inspector(s). Under the heading of the executive summary, the inspector should provide a brief summary of the inspection results and should reference the appropriate license section (in parentheses) for the following topics as appropriate to the inspection:

a. Management Organization and Controls;
b. ALARA Program;
c. Radiation Protection;
d. Public Doses and Environmental Protection;
e. Mill Operation and Facilities;
f. Radioactive Waste Management;
g. Transportation of Radioactive Materials;
h. Emergency Preparedness;
i. Laboratory Inspection; and
j. Decommissioning and Financial Assurance.

3.2 Report Details

This section provides the specific details recorded by the inspector during the inspection visit, and the supportive facts for determinations of violations or other concerns resulting from the inspection. Each subsection should provide discussions of the inspection scope, observations and findings, and conclusions. A summary of the information to be included in each subsection is provided below.

3.2.1. Entrance Meeting Summary

Review the major attendees at the entrance meeting and any major operational changes discussed during the meeting, including changes to staffing, operational changes, safety concerns, equipment updates, corrective actions, updates from previous inspections, and anything noted by the licensee such as self-identified violations or their concerns in advance of the inspection.

3.2.2 Site Status

Provide a brief history of the facility's operation, including type of facility, licensed materials handled at the facility, significant dates of operation, major license modifications, wellfield changes, and licensee changes (ownership, etc.). Also provide a summary of the present wellfield operation including the following: number of header houses, number of injection wells, dryer units (if any), general process flow, standby status (if applicable), number of monitor and injection wells, decommissioning status, groundwater restoration, etc. Note any results from previous inspections, any violations or items of concern outstanding, NOVs and orders as appropriate, public or landowner concerns, and outstanding URP review items for the facility.

3.2.3 Management Organization and Controls

Provide a summary of any organizational structural changes since the last inspection. Summarize Safety and Environmental Review Panel (SERP) records and results, and detail training that has occurred since the last inspection. Deficiencies in radiation protection personnel, RSO authority, SERP analysis, and training of staff should be discussed here with reference to standards that were violated.

3.2.4 ALARA Program

The purpose of this section is to report on items reviewed during inspection that ensure licensed activities are implemented using ALARA principles in maintaining occupational and public dose ALARA. The inspector should report on inspection activities related to ALARA records, onsite inspections, goals, trainings, personal protective equipment, and self-identified violations as outlined in URP Inspection Procedure URP-001. Deficiencies with the ALARA program should be discussed here with reference to the standards that were violated.

3.2.5 Radiation Protection

As part of the evaluation of the licensee's Radiation Protection Program summarize items evaluated in the inspector's analysis. Analysis should follow the inspection items listed in URP Inspection Procedure URP-001 under Radiation Protection. If the following items were reviewed during the inspection include those in the report:

1) The highest occupational dose received as a result of licensed activities;
2) Any positive bioassays;
3) Summary of monitoring data that was reviewed during the inspection;
4) Confirmatory measurements of postings throughout licensee operations; and
5) Summary of Radiation Work Permits reviewed, and whether proper protocols were adhered.

Deficiencies with the licensee's Radiation Program should be discussed here with reference to the URP standards that were violated.

3.2.6 Public Doses and Environmental Protection

The purpose of this subsection is to report on inspection activities that verified that doses to members of the public did not exceed dose limits, and that effluents released from the licensed activities to the unrestricted areas are adequately controlled and the environment is protected. The following information at a minimum should be included in this section if it was reviewed during the inspection:

(1) Dose of Maximally Exposed Individual;
(2) Bleed over the inspection period was maintained to prevent excursions;
(3) Number of significant spills, and that they were adequately reported to correct agencies;
(4) Number of excursions detailing when excursion started and corrective actions taken. Discuss if reporting and monitoring requirements have been kept;
(5) If any ponds have failed, leaked, or have been repaired since last inspection period; and
(6) Discuss any restoration activities.

Deficiencies with the licensee's Public Dose and Environmental Protection Program should be discussed here with reference to the URP standards that were violated.

3.2.7 Operation and Facilities

The purpose of this section is for the inspector to document inspection activities as it relates to operations. The inspection report should at a minimum document the following inspection activities as they were conducted:

(1) Discuss any observations of work practices to established procedures;
(2) Document any new changes since the last inspection, such as new equipment or configuration in the facilities circuit; and
(3) Summarize current operations with details such as flow rates and production.

Deficiencies with the Operation and Facilities Program should be discussed here with reference to the standards that were violated.

3.2.8 Radioactive Waste Management & Transportation

The purpose is to determine if transportation and disposal activities were conducted in compliance with regulatory requirements. Inspectors should discuss inspection activities performed to ensure this objective. The following items should be included under this section if they were reviewed during the inspection:

(1) Discuss if licensee disposal agreement for 11e.(2) byproduct material is still valid;

(2) Number of yellowcake shipments since last inspection and if the shipments were performed correctly;
(3) Number of 11(e). 2 byproduct shipments made since last inspection, and if the shipments were performed correctly;
(4) Discuss observations of resin shipments during inspection;
(5) Discuss any observations of placarding, shipping papers, or other shipping documents.

Deficiencies with the licensee's Radioactive Waste and Transportation Program should be discussed here with reference to the URP standards that were violated.

3.2.10 Emergency Preparedness

Discuss review of emergency response procedures and any incidents, spills, accidents, and emergencies since the last inspection. Note any corrective actions taken, results of review of training records, alarm inspections, and emergency drill records.

3.2.11 Laboratory Inspection

Discuss any items that were reviewed during the inspection to ensure the safe use of licensed materials in the laboratory.

3.2.12 Decommissioning and Financial Assurance

Discuss the review of records conforming to 10 C.F.R Part 40, records of spills or other contamination at the facility, and review of records such as drawings showing modification of structures in restricted areas where licensed materials are used or stored. Confirm that financial assurance has been provided to the Department, and whether or not radiological or environmental conditions (spills or process changes) at the facility have changed since the financial assurance was submitted. Determine whether the financial assurance needs to be updated to reflect the changes at the facility.

3.2.13 Site Tour and Area Survey

Include a discussion of the site areas visited during the site tour, the processes observed including licensed materials handling, and the licensee representatives present for the site tour and area survey. Also note signage and security measures (fences, gates, locked doors, restricted areas), safety procedures, condition of radiological monitoring equipment, and radiological surveys conducted by the inspector (including instrument and calibration due date).

3.2.14 Exit Meeting Summary

Provide the date the exit meeting was conducted, whether or not proprietary information was reviewed by the inspector, concerns by the licensee, and a statement that the inspection results were presented to the licensee’s representatives, including “Apparent Violations”, “Items of Concern”, and “Recommendations”. Discuss any follow-up commitments made by the inspector to the licensee, or any action items committed to by the licensee.

3.3 Supplemental Inspection Information

The following information may be included to clarify those persons involved in the inspection, the references used by the inspector(s), discussion items, schedule for future inspections, and acronyms used in the inspection report:

3.3.1 Partial List of Persons Contacted

This subsection should contain any licensee, division, state or federal agency or any other persons that were contacted during the inspection process, entrance interview, site tour and survey, and exit interview.

3.3.2 Inspection Procedures Used

Several inspection procedures are available for reference during site inspections. The references used during the inspection or for writing the inspection report should be provided in the report. These references may include (but are not limited to) the following:

URP *Inspection Procedures for Uranium Facilities*

NRC inspection procedures referenced may include the following:

IP 83822	Radiation Protection
IP 86740	Inspection of Transportation Activities
IP 87102	Maintaining Effluents from Materials Facilities ALARA
IP 88005	Management Organization and Controls
IP 88035	Radioactive Waste Processing, Handling, Storage, and Transportation
IP 88045	Effluent Control and Environmental Protection
IP 89001	In-Situ Leach Facilities
TI 2600/017	Implementation of the Decommissioning Planning Rule

3.3.3 Items Opened, Closed, and Discussed

This subsection may contain information regarding previous inspections, NOVs and Orders, or unresolved items relative to the present inspection.

3.3.4 Schedule for Future Inspections

If possible, provide an estimate for the timing of the next regularly-scheduled inspection. In general, each facility can expect two URP inspections per year exclusive of any special inspections resulting from violations or events of concern at a facility.

Attachment A

Inspector Evaluation Form

Wyoming Department of Environmental Quality

Uranium Recovery Group

INSPECTOR EVALUATION REPORT

Inspector:_____ Evaluator:_____

Licensee:_____ License Number:_____

Location:_____ Date of Inspection:_____

Inspection Type:_____

Preliminary Discussion with Inspector: **Done**

1. Explain the extent of the reviewer's participation in the inspection ☐
2. Discuss the procedure for introducing the reviewer to the licensee and explaining his/her presence during the inspection ☐
3. Explain the method that will be used for evaluating the inspector's performance ☐

Summary of Evaluation:

1. Inspector's performance rating:

   ☐ Meets Guidelines
   ☐ Needs Improvement

2. Comments:

3. The inspector would benefit from additional training in:

4. The evaluation was discussed with me.

_____ _____
Inspector's Signature Date.

_____ _____
Qualified Inspector's Signature Date.

Inspection Preparation

	YES	NO	N/A
1. Has the inspector reviewed the license and prior compliance history?			
2. Has the inspector planned the inspection?			
3. Does the Inspector have the appropriate instruments?			
4. Are the instruments in calibration?			
5. Does the inspector have the necessary supplemental materials? (regulations, inspection procedures, personnel dosimetry, ID, etc)			

Comments:

Opening

	YES	NO	N/A
1. Was the opening interview conducted with management?			
2. Were incidents or other self-identified violations discussed?			
3. Did the licensee understand the purpose, scope, and techniques?			

Comments:

Inspection

	YES	NO	N/A
1. Did the inspector perform a walkthrough of the facilities?			
2. Were licensee operations and use of handling of materials observed?			
3. Were the facilities checked for proper posting?			
4. Was security verified?			
5. Were workers interviewed to verify their understanding of safety procedures?			
6. Were workers checked for personnel dosimetry?			
7. Were adequate wipes, surveys, and measurements taken?			
8. Did inspector check for adherence to ALARA?			

Comments:

Closing

	YES	NO	N/A
1. Was there careful assembly of supporting information prior to the exit interview?			
2. Did the inspector close with appropriate level of management or make every effort to do so?			
3. Were recommendations clearly distinguished from items of non-compliance?			
4. Were items of noncompliance fully explained with regulations or license conditions cited?			
5. Did the inspector explain that follow-up actions would occur?			
6. Was the licensee advised of any requirements?			
7. Did the inspector properly decide if certain practices or operations should cease immediately?			
8. Were previous items of noncompliance discussed?			

Comments

Professionalism

	YES	NO	N/A
1. Did the inspector use proper judgment in evaluating radiation safety?			
2. Did the inspector demonstrate an adequate knowledge of health physics and regulations?			
3. Was the inspector's appearance appropriate for the type of inspection?			
4. Was rapport with management and workers sufficient for free exchange of information?			
5. Were the inspector's questions phrased appropriately?			

Comments

Inspection Report

	YES	NO	N/A
1. Did the inspector document all items in the inspection report?			
2. Were all deficiencies addressed?			
3. Was the inspection report generated in a timely manner?			

Comments

Reviewed:

_____ _____

Evaluator **Date**

_____ _____

Program Manager **Date**

Wyoming Department of Environmental Quality

Land Quality Division

Uranium Recovery Program

Uranium Recovery Program Inspection Procedures (URP-005)

Uranium Recovery Program Instrumentation: Field Function Checks and Use

Reviewed:_____ Date:_____

Approved:_____ Date:_____

Ryan Schierman, Uranium Recovery Program Manager

Effective Date_____

Revision Number_____

Section 1. Purpose

This Inspection Procedure describes and instructs URP inspectors on the quality control and quality assurance of portable radiation survey instrumentation. URP inspectors will be trained in the use of this procedure, and the instruments (or their equivalents) listed in the procedure, prior to any inspection using portable radiation instrumentation. This procedure also describes other sampling procedure QA/QC as necessary.

Section 2. Objectives

(a) Ensure instruments are in calibration and functioning correctly prior to use; and
(b) Ensure proper use and operation of the instrumentation, as well as understanding the meaning of the output reading.

Section 3. Scope

This Inspection Procedure describes the methods for the function check and use of direct reading portable radiation survey instruments. The objective of this procedure is to ensure that instruments are properly calibrated, to define checks to demonstrate that they are operating, and to provide records verifying that they are operating properly. The URP Supervisor is responsible to provide education and direction to designated personnel to ensure that the proper procedures are followed and that instruments are properly calibrated.

Portable survey instruments are used for a variety of purposes during routine operations at a licensee location. These instruments may be used to detect contamination on surfaces and personnel to minimize the potential or the spread of contamination, or they can be used similarly to a direct gamma exposure rate meter, depending on the instrument setup, as described later in this procedure. Direct gamma exposure rate meters are used to measure exposure rates for the purpose of determining background levels, locating areas where radionuclide concentrations may be elevated, and evaluating the potential radiation dose to workers or members of the public.

In order to perform its function properly, a portable survey meter must be calibrated at an established frequency (normally one year or less) and its performance checked on a daily basis when the instrument is used. Adequate records of calibrations and instrument checks must be maintained in order to assure the quality of the data obtained. Instruments which are not in calibration must be sent to a qualified vendor for calibration prior to use.

Section 4. Portable Radiation Survey Instruments

A large variety of portable radiation survey instruments are available. For the purpose of detecting radiation from naturally occurring uranium, thorium, and the associated decay products, the three basic types of radiation that will need to be detected are: alpha, beta, and gamma radiations. The URP proposes to use a Ludlum Model 43-93 probe (or equivalent), paired to a Ludlum Model 2224-1 ratemeter/scaler (or equivalent) for the detection of alpha and

beta radiation contamination. The Ludlum Model 43-93 is a “phoswich” probe, which consists of a silver doped zinc sulfide (ZnS(Ag)) scintillator and a plastic scintillator “sandwiched” together. The zinc sulfide scintillator responds to alpha radiation, while the plastic scintillator responds to beta radiation. The ratemeter/scaler may be operated such that the readout, in counts per minute (cpm) will be the response of the detector to alpha or beta radiation separately, with minimal cross-talk. The ratemeter/scaler may also be operated so that the readout in cpm reflects the total of alpha and beta radiation.

A Ludlum Model 19 (or equivalent), also known as a microR meter (or equivalent), will be used to identify exposure rates at various locations at licensee facilities. The Model 19 contains an internally housed 1 inch by 1 inch (1” x 1”) thallium doped sodium iodide (NaI(Tl)) crystal which responds to gamma radiation. The detector shall be calibrated to read out in microRoentgen per hour (µR/hr) in a radium 226 (Ra-226) gamma radiation field.

The Ludlum Model 44-10 probe or its equivalent, paired with a Ludlum Model 2221 ratemeter/scaler, or its equivalent, will be used to measure gamma radiation fields. The Model 2221 may be programmed to read out in cpm, µR/hr, or a myriad of other output options. Table 1 contains a list of radiation detection equipment the Uranium Recovery Program will make available to our staff.

Table:1 List of Equipment Available for URP Staff Use

Equipment	Detector	Quantity	Date of acquisition
Ludlum Model 19	NaI	3	6/1/16
Ludlum 2224-1	Ludlum 43-93	2	6/1/16
Ludlum 2221	Ludlum 44-10	1	TBD (before agreement)
Ludlum Model 25	(Personal Radiation Monitor)	2	6/1/16

Section 5. Instrument Quality Checks

(a) <u>Ludlum Model 19, Paired Ludlum Model 44-10/Model 2221, and Paired Ludlum Model 43-93/ Ludlum Model 2224-1 Quality Control and Daily Function Check Procedure</u>

The Model 43-93 probe or Model 44-10 probe is attached to the Model 2224-1 or Model 2221 ratemeter/scalar using a “C” connector cable. Ensure the cable is not damaged prior to use. The Model 43-93 has a thin metalized polyester window. Ensure there is no damage to this window prior to use. Should a hole in the window occur, a “light leak” will be present and the instrument background will increase dramatically with exposure to light. One way to check this (as holes can be small and difficult to see, i.e. “pin holes”) is to hold the instrument up towards a light source and examine the count rate. Should the count rate increase dramatically once the detector is held up to the light, the window is damaged and

this instrument must be repaired. The Model 19 is a single unit that requires no cables or cords. The Model 19, Model 2221, and the Model 2224-1 require D batteries to operate. To check the battery level, press “BAT”, or turn the selector to “BAT”. Change the batteries if the needle stops near or below the “BAT OK” mark, or below approximately 4.6 V for the Model 2221.

Upon receipt of the paired instruments from the calibration facility, the instrument will be fully quality-checked and efficiency-checked to ensure the instrument arrived in functioning condition. Upon receipt of an instrument, the Quality Check Form for the specific instrument type, an example of which is available in the appendices, shall be used to ensure the instrument is properly functioning. If the instrument is not functioning properly the instrument shall be returned to the calibration facility to be recalibrated or repaired. Subsequent function checks will be performed daily prior to use. The Ludlum Model 43-93/Model 2224-1 Daily Function Check sheet found in Appendix D may be used for this purpose, or an equivalent form may be used. A beta-emitting check source, such as a Tc-99 or Sr/Y-90 source, and an alpha-emitting check source, such as Th-230, will be made available to the inspector for this purpose. For the Model 19 and Model 44-10, a gamma-emitting source, such as a Cs-137 source, will be made available.

The Ludlum Model 19, and Model 44-10/Model 2221 will also need to be quality controlled and function-checked in the same manner as the Ludlum Model 43-93/Model 2224-1. However, the Model 19 does not have an integrating scaler capability. Therefore, instead of 1-minute counts, the user will record 10 consecutive readings in the “Slow” mode (subsequent to allowing the detector ample time to equilibrate in the radiation field).

More advanced issues or questions than what are addressed in this inspection procedure should be researched at the Ludlum website (www.ludlums.com), or by calling the manufacturer directly.

(i) Upon receipt of the instrument:
   A. Record the pertinent instrument information on the quality control form in Appendix A.
      i. Make and Model of the detector and ratemeter;
      ii. Serial numbers of both the detector and ratemeter;
      iii. Date of calibration, ensure this is within one year prior to use;
      iv. Source types used (e.g. Th-230, Tc-99) and the source serial numbers; and
      v. Source strength in decays per minute (DPM) (decay corrected as necessary)

B. Take 10 background 1-minute counts in both the alpha and beta channels (or only the single channel for the Model 44-10/Model 2221 and Model 19).
C. Take 10 1-minute counts with the probe completely centered over the alpha-emitting source in both the alpha and beta channels. For the Model 19 and Model 44-10/Model 2221, use the gamma-emitting source (Cs-137) and proceed directly to step “E”.
    i. Ensure the source is returned to the holder.
D. Take 10 1-minute counts with the probe completely centered over the beta-emitting source in both the alpha and beta channels.
    i. Ensure the beta source is returned to the holder and placed at least a meter away from the detector when not in use.
E. Using the form in Appendix B, and the provided equations therein, determine the efficiency and control values of the Model 43-93 for both alpha and beta radiation. Consult the URP Health Physics Supervisor if you have questions or issues.

(ii) Daily prior to use:
A. Record the pertinent instrument information on the function check form in Appendix A.
    i. Make and Model of the detector and ratemeter/scaler;
    ii. Serial numbers of both the detector and ratemeter/scaler;
    iii. Date of calibration, ensure this is within one year prior to use;
    iv. Source types used (e.g. Th-230, Tc-99) and the source serial numbers; and
    v. Source strength in DPM (decay corrected as necessary).
B. Take a background 1-minute count in both the alpha and beta channel. (or only the single channel for the Model 44-10/Model 2221 and Model 19).
C. Take a 1-minute count with the probe completely centered over the alpha-emitting source in both the alpha and beta channels. For the Model 44-10/Model 2221 and Model 19, place the Cs-137 source 6 inches from the center of the probe. Use the provided template in Appendix A for this purpose. Proceed to step “E”.
    i. Ensure the source is returned to the holder.
D. Take a 1-minute count with the probe completely centered over the beta-emitting source in both the alpha and beta channels.
    i. Ensure the beta source is returned to the holder and placed away from the detector by at least a meter when not in use.
E. Using the appropriate form in either Appendix A or B, and the provided equations therein, determine that the instrument is within the provided control values, calculated in Section 5(a)(i) above. If within the control values, proceed using the instrument. If not, ensure that

there is no other issue with the instrument, e.g. batteries need replaced, the high voltage needs adjusted, or high radon levels in building. If an issue is identified do not use the instrument for values which will be recorded or used to identify issues. Keep the function check sheets for each inspection with the documentation from that inspection.

Documentation shall be maintained to indicate instrument operability and/or malfunction problems on a daily basis when instruments are in use. QA documentation should be kept for both background counts and counts with a check source. The attached instrument QA daily check charts in Appendices C and D are available for use. An equivalent form may also be used. The "Calculation of Mean and Control Limits" charts attached in Appendices A and B, are also available for use. Equivalent charts may be used at the discretion of the URP Health Physics technical lead. Daily instrument checks could be completed on a chart, similar to the attached daily instrument QA charts in Appendices C and D.

(b) <u>Use of the Ludlum Model 19</u>

i. Using the buttons on the left side of the top plate, check the HV and BAT and complete the quality control procedure, per the procedure in (a).
ii. Once the quality control procedure is completed, use the switch to turn the operation to FAST mode (F, with a rabbit pictogram).
iii. Turn the selector from OFF to 25 (in red). This is the lowest reading setting, used for measuring low level radiation from 0 to about 25 microRoentgen per hour (µR/hr). If the needle is "pinged" to the far right of the scale, switch to a higher setting, starting at 50, and increase the selector settings as necessary.
iv. To read the instrument, use the needle and scale. Red range values (25 and 250) should be read from the red scale. Black range values (50, 500, and 5000) should be read from the black scale.
v. To take a measurement to be recorded, switch from FAST mode to SLOW mode. Measurement recordings should be completed in SLOW mode, which helps to stabilize the reading. Allow the instrument ample time to stabilize in slow mode.

(c) <u>Use of the paired Ludlum Model 43-89/Ludlum Model 2224-1</u>

i. Using the toggle for HV and the turning selector knob for the battery, check the HV and BAT and complete the quality control procedure, per the procedure in (a).
ii. Turn the selector knob to "x1", increasing the scale if areas which max out the scale are found.
iii. For scanning, slowly move the detector over the area of interest in the alpha only mode. Hold the detector above the surface of the area of interest by less

than 1 cm, preferable less than 0.5 cm. Remove debris which may puncture the thin window.

iv. For scaler counts, turn the MIN selector knob to 1-minute. Hold the detector against the object or area of interest only if you can be sure that the action will not contaminate the detector. Otherwise, hold the detector 0.5 cm above the surface of the area of interest. Press the button in the handle of the Model 2224-1 to begin the scaler count.

(d) Use of the paired Ludlum Model 44-10/Ludlum Model 2221

i. Pres the ON/ACK button for approximately one second to turn the Model 2221 ON (press for >3 seconds to turn the Model 2221 OFF).

ii. Press the MODE button to advance between the three operating modes.

iii. Use the COUNT mode for scaler counting, the RATE mode for exposure rate measurements, and the MAX mode to discover the highest recorded reading of the session.

iv. The instrument should be set up by the URP Health Physics technical lead prior to use. The programming should not be attempted by inspectors unless they are trained to do so.

Section 6. Other Inspection Sampling Processes

Occasionally, soil sampling, air sampling, liquid (surface or ground water) sampling, swipe sampling, or other sampling may be completed at the discretion of the URP. These samples may be taken as confirmatory samples, split samples of licensee samples, field duplicates of licensee samples, or other samples. These samples will be sent to laboratories deemed appropriate by the URP. These laboratories' Quality Management Programs will be reviewed by the URP for QA/QC procedures deemed appropriate by the URP. Specific procedures for each sampling effort will be developed by the URP prior to any sampling event.

(a) Soil and Sediment Sampling – General Procedure

NOTE: This procedure should be viewed as a general procedure. While this procedure could be used in aiding the development of a more specific soil sampling procedure, this procedure is not specific to a single sampling event. SOPs, by definition, are specific to a planned event or goal, and not general in nature. However, this procedure is provided as guidance for a future procedure, developed specifically to the goals of the sampling event. Procedures for specific types of sampling, such as composite sampling, or soil profiles should be completed prior to any sampling even requiring these types of samples.

(i) Equipment and Supplies

A. Trowel, auger or other soil gathering tool acceptable for the required sampling

B. Plastic re-sealable bags (half-gallon or larger) (Zip-Loc type)

C. Permanent Marker
D. Laboratory Supplied Chain of Custody
E. Field Notebook
F. Handheld GPS
G. Equipment Manuals
H. Tape Measure or Ruler
I. Stiff bristle brush
J. Spray bottle filled with water (deionized or distilled) (as necessary)
K. First Aid Kit
L. Digital Camera (as necessary)
M. Personnel Protective Equipment (as necessary)
N. Water resistant ink pens
O. Hard sided shipping container or cooler
P. Shipping Tape
Q. Disposable Gloves
R. Pin flags
S. Water resistant sample labels
T. Paper towels

(ii) Obtaining Samples

A. Wash hands or change disposable gloves prior to sample collection as necessary
B. Locate the sampling location utilizing the GPS instrumentation available
C. Note the location coordinates in the coordinate system of interest for the site. Adjustments to a previously decided upon location should be made in cases of dangerous conditions (such as on the side of a steep slope).
D. Clear grass, rocks, sticks, debris, and organic substances from the top of the location. If present in the sample, remove these items as well to the extent practical.
E. Using the auger or trowel, sample the soil to the depth of interest, generally the top 0-5 cm or 0-15 cm. However, in some cases, a soil profile may be of interest, generally, 0-30 cm, 30-60 cm, and 60-100 cm. Development of a specific soil profile sampling procedure should be completed prior to completing a soil profile sample. If a composite sample is being taken, the development of a composite sampling procedure should be completed.
F. Record relevant information in the logbook such as sampler name, sample ID, date, time, soil type, soil color, moisture, QA/QC information, irregularities in the sample/sampling technique, other field observations, sample coordinates etc. Take a picture using the digital camera as necessary.

G. Record the date, time, and sample ID onto the bag and the label. A label may include other information, such as relevant analytes or conditions relevant to the sample
H. Store samples in the hard sided container
I. Complete the COC as necessary for the sample and analysis
J. Clean the sampling tool with the spray bottle, paper towels, and brush as necessary for QA/QC purposes

(b) Surface Water Sampling

(i) Equipment and Supplies

A. Permanent marker
B. Laboratory supplied Chain of Custody
C. Field notebook
D. Handheld GPS
E. Equipment manuals
F. First aid dit
G. Digital camera (as necessary)
H. Personnel protective equipment (as necessary)
I. Water resistant ink pens
J. Hard sided shipping container or cooler
K. Shipping tape
L. Disposable gloves
M. Water resistant sample labels
N. Paper towels
O. Preservatives as required
P. Sample collection containers (e.g. beaker, dipper)
Q. Dissolved oxygen/pH/conductivity/temperature meters as necessary
R. Ice packs
S. Filtering equipment
T. pH buffers and standards as necessary

(ii) Obtaining Samples

A. All sampling equipment should be free of residuals, rinsed using DI water, and decontaminated prior to sampling events.
B. Instruments for field measurements, such as any conductivity or dissolved oxygen meters should be calibrated prior to the sample event, or in the field, per the manual for the instrument. These readings and calibrations shall be recorded in the field notebook.
C. Prior to sampling, field conditions shall be recorded in the field notebook. Any abnormalities will be recorded.
D. Grab samples will be collected near the edges of water bodies such as ponds and lakes. For streams and rivers, grab samples will be taken in areas easily accessible and safe for the sampler. If an ephemeral stream shall be sampled, sampling devices will need to be placed in the

thalweg of the drainage such that any amount of water flow in the drainage may be collected.

E. Water samples will be labeled clearly and the COC will be filled.

F. The following information will be recorded in the field notebook:

   i. the sampling location;
   ii. the actual time and date when the sample was obtained;
   iii. the person(s) performing the sampling;
   iv. the temperature, pH, conductivity and dissolved oxygen (as required);
   v. the sample identification numbers, including those for any QA/QC samples;
   vi. the number of samples taken;
   vii. all field observations; and
   viii. any irregularities or problems that may have a bearing on the sample QA/QC

(iii) QA/QC Sampling

A. QA/QC of field measuring equipment involves the review of calibration procedures and the use of standards. QA/QC of field sampling documentation involves the routine verification of field log-books and/or forms and the required sign-off on the Chain-of-Custody (COC) forms. Each QA/QC sample should be labeled with the correct QA/QC identification number and sent along with the other samples to the independent laboratory for analysis. The number and frequency of QA/QC samples to be collected is generally defined as 10% of the samples taken (i.e. when collecting monthly samples this would correlate to one of each type of field QA/QC sample every ten months) or one per year, whichever is more frequent. Specific work plans may specify a different frequency of QA/QC samples Sample containers and preservatives for QA/QC samples should be prepared in the same manner as all other sample containers.

   i. Field Duplicate Samples – samples that have been divided into two or more portions at some step in the measurement process. Each portion is then carried through the remaining steps in the measurement process. An example of a field duplicate sample is a water sample that has been collected and poured into two sets of sample containers.
   ii. Equipment Rinsate Samples – samples that are obtained by collecting deionized or distilled water that has contacted the decontaminated sample collection equipment (i.e. beaker or dipper). These samples are then sent to the laboratory for analysis of the same parameters as the sample taken with the same equipment. These samples will be used to determine if decontamination procedures have been effective. Equipment

rinsate samples may also be taken from decontaminated equipment planned for dedicated used, prior to use at the dedicated location.

iii. Field Blank Samples – samples that are collected by pouring deionized water directly into a sample container. The blank will be analyzed for the same parameters as the samples that were collected or are associated with that blank.

iv. Matrix Spike Samples – The laboratory will analyze the sample for the analytes being measured in other related samples within the sample delivery group. The laboratory will then add (spike) a known quantity of a specific analyte to the sample and reanalyze the sample for the spiked analyte. The percent recovery of the spiked analyte is determined and matrix interferences are evaluated. A sufficient quantity of sample will be collected to allow the laboratory to spike the sample for each analyte to be analyzed.

(c) Packaging and Shipping

i. All samples will be sent to qualified laboratories for analysis

ii. Ship samples in a cooler or hard-sided container, as necessary, as soon as possible and ensure samples will not exceed analyte-specific holding times.

iii. Make a copy of the final chain of custody for site records and insert the original into a re-sealable bag and tape it to the inside top of the shipping container. Tape the container shut and sign the custody seal, if used. Ship samples as coordinated with the laboratory.

iv. All records and documentation associated with sample collection shall be retained in accordance with regulatory requirements. Chain of Custody forms are maintained in a binder or folder designated by the Project or Field Manager for that purpose. The site logbook is maintained electronically or by bound logbook as designated by the Project or Field Manager. Laboratory results are maintained electronically and by hard copy in a binder or folder designated by the Project or Field Manager for that purpose.

Calculation of Mean and Control Limits for the 44-10 or Model 19							
Cs-137 Source S/N:							
Model 44-10 or Model 19 S/N:				Model 2221 S/N:			
Date of 1st Instrument Use (Post-Cal)	Count 1	Count 2	Count 3	Count 4	Count 5	Count 6	Count 7
	Bkg	Bkg	Bkg	Bkg	Bkg	Bkg	Bkg
	Src	Src	Src	Src	Src	Src	Src
	Count 8	Count 9	Count 10	Sample Mean (λ)	20% of Sample Mean	Lower Control Limit (λ+20%)	Upper Control Limit (λ+20%)
	Bkg	Bkg	Bkg	Bkg	Bkg	Bkg	Bkg
	Src	Src	Src	Src	Src	Src	Src

$$\lambda = \frac{1}{10}\sum_{i=1}^{10} n_i$$

Where λ is the mean of the counts, and n is the 1-minute scaler count or exposure rate

Instructions: Take 10 1-minute background counts and record the results. For the Model 19, record 10 consecutive exposure rates at the background location. Take 10 1-minute Cs-137 source counts, record results. Use the attached template for the source counts, and ensure that you use the same location as the background. After recording all of the necessary counts, use the equation above to develop the mean of the counts and then create the control limits using this mean.

Calculation of Mean and Control Limits							
	Model 43-93 S/N:			**Model 2224-1 S/N:**			
Date of 1st Instrument Use (Post-Cal)	**Count 1**	**Count 2**	**Count 3**	**Count 4**	**Count 5**	**Count 6**	**Count 7**
	Bkg α	**Bkg α**	**Bkg α**	**Bkg α**	**Bkg α**	**Bkg α**	**Bkg α**
	Bkg β	**Bkg β**	**Bkg β**	**Bkg β**	**Bkg β**	**Bkg β**	**Bkg β**
	α/α	**α/α**	**α/α**	**α/α**	**α/α**	**α/α**	**α/α**
	β/α	**β/α**	**β/α**	**β/α**	**β/α**	**β/α**	**β/α**
	α/β	**α/β**	**α/β**	**α/β**	**α/β**	**α/β**	**α/β**
	β/β	**β/β**	**β/β**	**β/β**	**β/β**	**β/β**	**β/β**
	Count 8	**Count 9**	**Count 10**	**Sample Mean (λ)**	**20% of Sample Mean**	**Lower Control Limit (λ+20%)**	**Upper Control Limit (λ+20%)**
	Bkg α	**Bkg α**	**Bkg α**	**Bkg α**	**Bkg α**	**Bkg α**	**Bkg α**
	Bkg β	**Bkg β**	**Bkg β**	**Bkg β**	**Bkg β**	**Bkg β**	**Bkg β**
	α/α	**α/α**	**α/α**	**α/α**	**α/α**	**α/α**	**α/α**
	β/α	**β/α**	**β/α**	**β/α**	**β/α**	**β/α**	**β/α**
	α/β	**α/β**	**α/β**	**α/β**	**α/β**	**α/β**	**α/β**
	β/β	**β/β**	**β/β**	**β/β**	**β/β**	**β/β**	**β/β**

$$\lambda = \frac{1}{10}\sum_{i=1}^{10} n_i$$

Where λ is the mean of the counts, and n is the 1-minute count

$$\varepsilon = \frac{\lambda - C_{Bkg}}{A_S}$$

Where ε is the efficiency of the detector, λ is the mean of the counts, C_{Bkg} is the background counts in 1 minute, and A_S is the source activity in dpm

$$MDC = \frac{1}{\varepsilon} * \frac{1}{100\ cm^2} * (3 + 4.65\sqrt{B})$$

Where MDC is the minimum detectable concentration in dpm per 100 square centimeters, ε is the efficiency of the detector, and B is the background counts

Alpha Efficiency:		**Beta Efficiency:**	
Alpha MDC:		**Beta MDC:**	

Instructions: Take 10 1-minute background counts, record alpha and beta channel results. Take 10 1-minute alpha source counts, record alpha and beta channel results. Take 10 1-minute beta source counts, record alpha and beta channel results. In the chart, the first symbol is the channel, and the second symbol is beta, i.e. α/β would represent the 1-minute alpha channel count result with the beta source. Next, use the above equations to complete the table.

Inspector:	
Model 19 or 44-10 S/N:	
Model 2221 S/N:	
Cs-137 Source S/N:	

Date	Battery OK?	Background	Gross w/ Source	Net Gamma	Pass?	Initials
					Y or N	
					Y or N	
					Y or N	
					Y or N	
					Y or N	
					Y or N	
					Y or N	
					Y or N	
					Y or N	
					Y or N	

Net Cs-137 LCL-UCL Range:

Notes:

Inspector:		**Licensee/Site/Project:**	
Model 43-93 S/N:		**High Voltage:**	
Model 2224-1 S/N:		**Calibration Date:**	
Th-230 Source S/N:		**Activity:**	
Tc-99 Source S/N:		**Activity:**	

Date	**Battery OK?**	**Background**	**Alpha Source (Th-230)**	**Beta Source (Tc-99)**	**Net Alpha Source**	**Net Beta Source**	**Pass?**	**Initials**
		α	α	α	α	α	**Y or N**	
		β	β	β	β	β		
		α	α	α	α	α	**Y or N**	
		β	β	β	β	β		
		α	α	α	α	α	**Y or N**	
		β	β	β	β	β		
		α	α	α	α	α	**Y or N**	
		β	β	β	β	β		
		α	α	α	α	α	**Y or N**	
		β	β	β	β	β		

Alpha Background LCL-UCL Range:

Beta Background LCL-UCL Range:

α Channel/ α Source LCL-UCL Range:

β Channel/ α Source LCL-UCL Range:

α Channel/ β Source LCL-UCL Range:

β Channel/ β Source LCL-UCL Range:

Instructions: Check the battery level prior to use and replace batteries (D-batteries) as needed. Take a background 1-minute count and record both the alpha and beta channel. Take a 1-minute count with the probe completely centered over the alpha emitting source and record both the alpha and beta channels. Ensure the source is returned to the holder. Take a 1-minute count with the probe completely centered over the beta emitting source and record the results for both the alpha and beta channels. Ensure the beta source is returned to the holder and placed away from the detector by at least a meter when not in use.

Notes:

Subsection 4.5
Enforcement Program Elements

Department of Environmental Quality

WYOMING

4.5 Enforcement Program Elements

Section 4.5 of SA-700, *Handbook for Processing an Agreement* states the Wyoming Department of Environmental Quality ("WDEQ") may adopt enforcement procedures modeled on the NRC procedures, or those used by another Agreement State. The Enforcement Program Elements are governed by the Wyoming Environmental Quality Act, Wyoming Statutes §§ 35-11-701, -901, - 903 through -904, and the Uranium Recovery Program's rules and regulations.

SA-700, *Handbook for Processing an Agreement*

4.5 Enforcement Program Elements
4.5.1 Routine Enforcement Procedures

Routine enforcement procedures describe the actions the program takes in response to a violation of a regulatory requirement that is not serious in nature, and is not a repeated violation.

- See Wyo. Stat. §§ 35-11-701 and -2003;
- See Uranium Recovery Program's *Enforcement Procedure*, Appendix A of this subsection;
- See Uranium Recovery Program Rules, Chapter 2, *Inspections, Enforcement, and Penalties*; and
- See Uranium Recovery Program Rules, Chapter 8, *Risk Informed, Performance Based Licensing and Inspection.*

4.5.1.1 Information Needed

The State should submit its procedures for routine enforcement.

- See Uranium Recovery Program's *Enforcement Procedure*, Appendix A of this subsection.

4.5.1.2 Evaluation Criteria

The State should have procedures for assuring the fair and impartial administration of regulatory law. They should scale the actions to the seriousness of the violation.

The procedures should establish standard methods of communicating sanctions to the licensee. The State should give written notice using standardized wording and format. Legal counsel should review the wording and format.

The procedures should include a means for tracking the completion of enforcement actions.

- See Uranium Recovery Program's *Enforcement Procedure*, Appendix A of this subsection.

4.5.2 Escalated Enforcement Procedures

For serious or repeated violations of regulatory requirements, the program should use escalated enforcement.

- See Uranium Recovery Program's *Enforcement Procedure*, Section 3.0 Escalated Enforcement, Appendix A of this subsection; and
- Wyo. Stat. §§ 35-11-115, -701, -901(j) through (k), and -2003.

Escalated enforcement actions usually supplement the routine actions. Escalated enforcement actions may include:

(a) Administrative or civil monetary penalties;

- Wyo. Stat. § 35-11-901(a).

(b) The modification, suspension, or revocation of the license; or

- Wyo. Stat. §§ 35-11-109(a)(xiii), -409, -412, -2003(f).

(c) Referral for criminal prosecution.

- Wyo. Stat. §§ 35-11-901(j) through (k) and -904; and
- See Uranium Recovery Program Rules, Chapter 2, *Inspections, Enforcement, and Penalties*.

4.5.2.1 Information Needed

The State should submit its procedures for escalating enforcement actions.

- See Uranium Recovery Program's *Enforcement Procedure*, Section 3.0, Escalated Enforcement, Appendix A of this subsection.

4.5.2.2 Evaluation Criteria

The State should scale the sanctions in escalated enforcement cases to the seriousness of the violation. The sanctions should be more severe than routine enforcement.

The procedures should address notifying the licensee of proposed escalated enforcement actions. The notice should be written, using standard wording and format when practical.

The enforcement program element manager, or higher, should sign notices of escalated enforcement.

Escalated enforcement actions should be coordinated with legal counsel.

- See Uranium Recovery Program's *Enforcement Procedure*, Section 3.0 Escalated Enforcement, Appendix A of this subsection.

Appendix A to Subsection 4.5
Enforcement Procedures
Uranium Recovery Program

Department of Environmental Quality

WYOMING

1.0 GENERAL INFORMATION

1.1 Purpose

The purpose of the Wyoming Uranium Recovery Program (URP) is to protect public health, safety, and the environment through appropriate enforcement actions. Enforcement action should be used to:

- Deter noncompliance by emphasizing the importance of regulatory compliance; and
- Encourage prompt identification and comprehensive corrective action following the occurrence of violations.

1.2 Applicability

The URP's *Enforcement Procedure* applies to all URP licensees and applicants and those engaging in unlicensed or unpermitted activities. This includes, but is not limited to, the employees, agents, and contractors of licensed or unlicensed entities involved in URP-regulated activities.

1.3 Statutory Authority and Regulatory Framework

The statutory authority for enforcement under the URP is provided in the Wyoming Environmental Quality Act and Wyoming Statutes §§ 35-11-102 and -2001 through -2004.

1.4. References

1. NRC Criteria Policy Statement, Criteria 1, 18, 19, and 23;
2. NRC NUREG-1600, *General Statement of Policy and Procedure for NRC Enforcement Actions*;
3. NRC Inspection Manual Chapters 2800 and 2801; and
4. URP Rules and Regulations, Chapter 2, *Inspections, Enforcement, and Penalties*.

1.5 Definitions

Definitions for the *Enforcement Procedure* may be found in the Wyoming Environmental Quality Act, Wyoming Statute §§ 35-11-101 *et seq*. and the URP's rules and regulations.

2.0 ENFORCEMENT ACTION

This section describes the various ways the URP can handle violations. The manner in which a violation is disposed will vary depending on the nature of the violation and should account for the seriousness of the violation and the circumstances surrounding the violation. The actions, including sanctions and penalties, taken by the URP will be scaled according to the seriousness of the violation(s).

Enforcement actions should be reviewed by the Wyoming Attorney General's Office.

2.1 Administrative Actions

2.1.1 Demands for Information

A written demand for information is used to determine whether an order or other action is warranted.

2.1.2 Inspection Letters

An inspection letter is issued at the conclusion of an inspection to document the occurrence of the inspection, the inspector's findings, and potential or existing violations. An inspection letter may demand resolution of issues or problems identified by the inspector or violation within a certain amount of time as determined by the URP.

2.1.3 Letters of Conference

A letter of conference is issued to notify licensees or non-licensees of potential or existing violations. A letter of violation may request self-identification and remedy of a violation. A letter of violation is generally utilized prior to a Notice of Violation and Order or and may be used prior to the issuance of a Notice of Violation and Order or escalated enforcement.

2.1.4 Informal Enforcement Conference

An informal enforcement conference may occur to discuss potential or existing enforcement actions. An informal enforcement conference can be used to gather more information, resolve any potential or existing violations, or to determine whether an order or other action is warranted.

2.1.5 Stipulated Settlements and Settlement Agreements

The Wyoming Department of Environmental Quality (WDEQ) and URP may negotiate and enter into stipulated settlements and settlement agreements in lieu of litigation. Stipulated settlements and settlement agreements may involve the payment of penalties, implementation of compliance schedules, or other settlement negotiations.

2.1.6 Enforcement Tracking

Enforcement documentation will be tracked according to the facility permit/license number in addition to the docket number in the case of NOVs and orders. Completion of enforcement actions will be recorded in the facility license file and will be kept secure in the URP headquarters office in Cheyenne, Wyoming.

2.2 Notices of Violation (NOV)

A Notice of Violation is written notification of a violation of the Wyoming Environmental Quality Act, rule, regulation, standard, permit, license, or variance. A Notice of Violation must specify the provision of law being alleged to be violated and the facts alleged to constitute the violation. A Notice of Violation must be signed, at a minimum, by the Director of the Wyoming Department of Environmental Quality.

A Notice of Violation may be accompanied by an Order requiring a person to cease and desist from the violation within a certain amount of time as determined by the Director of the Wyoming Department of Environmental Quality. Additionally, violations are subject to penalties, injunctive relief, and other civil or criminal remedies as provided by the law.

2.3 Monetary Penalties and Injunctions

Any person who violates the Wyoming Environmental Quality Act, rules, regulation, standard, or permit is subject to penalties and/or an injunction. Monetary penalties and shall not exceed $10,000.00 per day per violation. Monetary penalties and injunctions and are to be determined by a court of competent jurisdiction in a civil action.

2.4 Orders

An Order is a written directive by the Director of the Wyoming Department of Environmental Quality to demand a licensee or other person cease and desist violations or unauthorized or illegal activities, to suspend or revoke a license, or to take such other action as may be proper. Orders are deemed final unless a request for a hearing before the Wyoming Environmental Quality Council is made no later than 10 days after the date of order.

2.5 Exercise of Discretion

Notwithstanding the normal guidance contained herein, the URP may choose to exercise discretion and either escalate or mitigate enforcement sanctions within URP's statutory authority to ensure that the resulting enforcement action takes into consideration all of the relevant circumstances of the particular case.

3.0 ESCALATED ENFORCEMENT

This section describes escalated enforcement action that the URP may take for serious or repeated violations. The URP may utilize escalated enforcement pursuant to Wyoming Statutes and the URP's rules and regulations. Enforcement will be handled on a case by case basis and will be scaled according to the seriousness of the violation(s). The URP will notify licensees of escalated enforcement.

Pursuant to Wyoming Statutes and the URP's rules and regulations, the URP is authorized to assess civil or monetary penalties, modify, suspend, and revoke a license, and refer matters for criminal prosecution. Notices of escalated enforcement should be signed by the Director of DEQ and the Administrator of the Land Quality Division. Escalated enforcement actions should be reviewed by the Wyoming Attorney General's office. URP will notify licensees of escalated enforcement actions in writing.

3.1 Emergency Orders

An Emergency Order may be issued for conditions which pose immediate and substantial danger to human or animal health or safety, which require immediate action.

3.2 Escalating Civil Penalties

Any person who willfully or knowingly violates the Wyoming Environmental Quality Act, rules, regulation, standard, or permit is subject to higher penalties not to exceed $25,000.00 per day per violation.

3.3 Criminal Sanctions

Any person who willfully or knowingly violates the Environmental Quality Act, rules, regulation, standard, or permit is subject to imprisonment for not more than one year, or not more than two years for a subsequent conviction.

4.0 Training

The WDEQ receives periodic training on the enforcement process from the Wyoming Attorney General's Office. The training is considered privileged attorney-client communication, and its content is not included in this application.

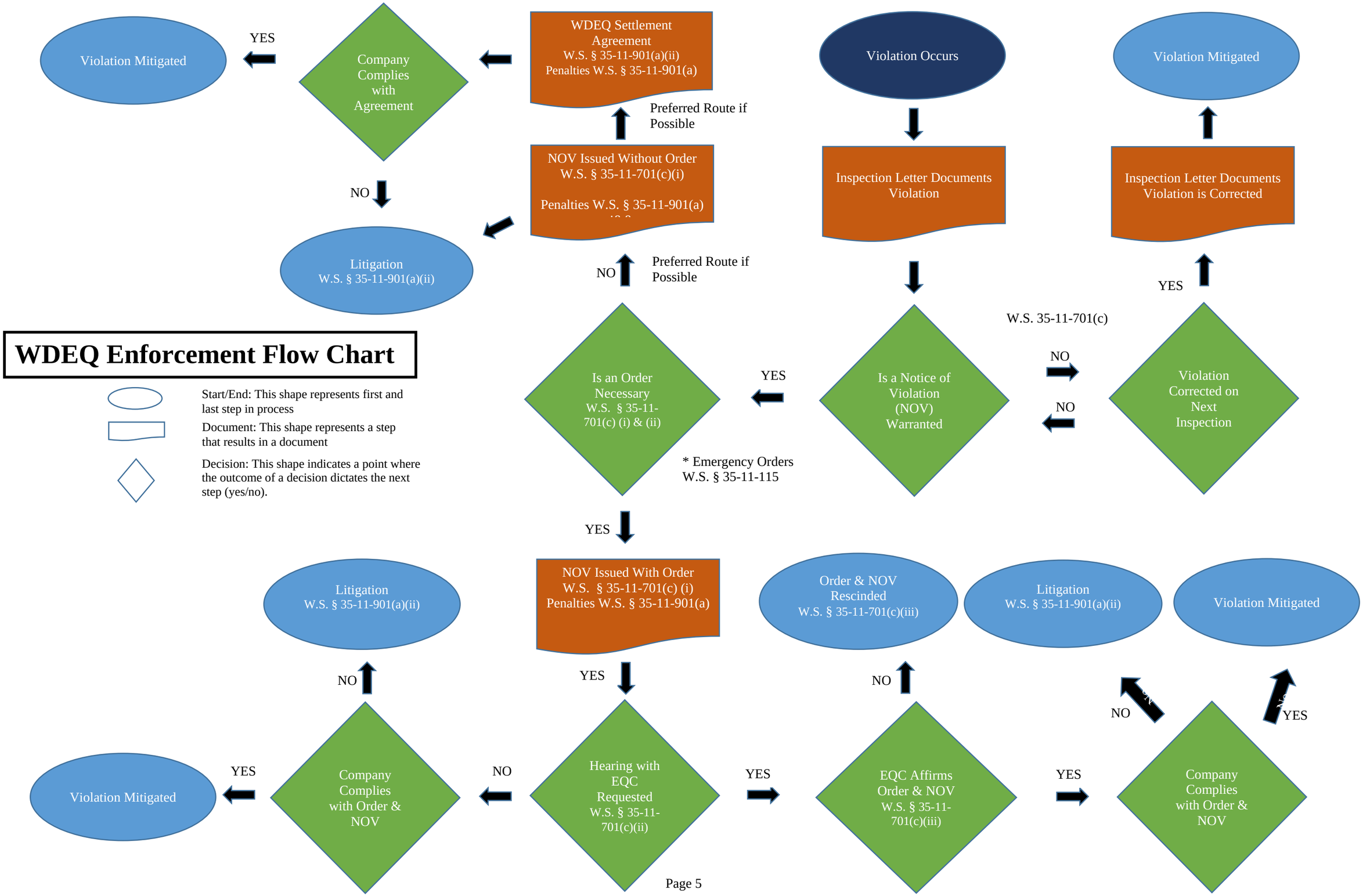
5.0 Enforcement Flow Chart.

The process by which WDEQ handles violations is governed by Wyoming Statute and is shown in Figure 1. For violations that have low health and safety significance to the public, the worker(s), or the environment, the LQD Administrator attempts to promptly eliminate the source or cause of the violations by conference, conciliation, and persuasion (W.S. §35-11-701(c)). The licensee/permitee is notified of confirmed violations through formal inspection letters.

If a violation is not corrected or if a violation is of significant risk to the health and safety of the public, worker(s), or the environment, a Notice of Violation (NOV) will be issued. The NOV may be accompanied by an order if, after reviewing the violation, the LQD Administrator and the WDEQ Director determine it is warranted. For violations that have immediate risk to health and safety of the public, worker(s), or the environment, the WDEQ Director may issue an Emergency Order (W.S. 35-11-115).

Each NOV that is issued is tailored to the individual violation and is issued by both the LQD Administrator and the WDEQ Director. The NRC process is similar in the fact that each violation has to be evaluated to determine Severity Level I-IV. WDEQ prefers to avoid formal litigation and, where possible, prefers to negotiate settlements to expeditiously resolve violations. All NOVs and their corresponding Settlement Agreements are posted on the LQD website for public access.

WDEQ Enforcement Flow Chart



Subsection 4.6

Technical Staffing and Training Program Elements

Department of Environmental Quality

WYOMING

4.6 Technical Staffing and Training Program Elements

The Uranium Recovery Program (URP) has adopted the technical staffing standards listed in Nuclear Regulatory Commission (NRC) Inspection Manual 1248, Appendices I and H. The URP will consist of one program manager, four technical positions, one administrative assistant, one attorney through the Wyoming Attorney General's Office, and three existing LQD Full-Time Equivalent (FTE).

4.6.1 Technical Staff Organization

The State should conduct an analysis of the expected workload and establish an appropriate staffing plan. The analysis should consider the number, distribution, and sizes of the licensees that will transfer under the Agreement.

The staffing analysis should also consider if the State will perform radiation safety reviews of sealed sources and devices containing radioactive material and register the sealed sources or devices for distribution; license a LLRW commercial land disposal site; license uranium or thorium recovery facility subject to the requirements of UMTRCA; license major manufacturers, universities with major research programs, or other large scale materials users; or will need to perform increased controls inspections on affected licensees.

- See Subsection 4.6.1 of this application.

4.6.1.1 Information Needed

The State should submit its program staffing plan, including organizational charts. The staffing plan should show the number of staff members assigned to specific responsibilities, such as license review and inspection and for each major category of licensee. It should estimate the workload for the licensees that will transfer, and the other duties of the program.

- See Subsection 4.1.2 and 4.6.1 of this application.

4.6.1.2 Evaluation Criteria

The State is not required to use the sample forms in Appendix B of the Handbook. If used, the State should modify the forms as needed to reflect the mix of license programs that the State will regulate.

- See Subsection 4.6.1 of this application.

The State must staff the program with enough qualified personnel. The staff must consist of at least two technical staff.

- See Subsection 4.6.1 of this application.

The NRC does not have a specific requirement for the number of staff required, but the experience of existing Agreement States should be considered. Depending on training and experience, Agreement State programs typically employ 1 to 1.5 technical staff members per 100 active licenses. Waste disposal sites or uranium mills require additional staff. The distribution of staff should be based on workload estimates that are

consistent with the NRC and other Agreement State programs experience.

- See Subsection 4.6.1 of this application.

The State workload estimate should be based on the State's organization, policies, practices, and procedures. The State should not create a staffing plan based solely on NRC staffing plan.

4.6.2 Formal Qualification Plan

The ability to conduct an effective material program depends on having enough trained and experienced staff members. Since retirements and other normal events cause the departure of staff members, there must be a plan for staff replacement.

4.6.2.1 Information Needed

The State should submit its position descriptions and its qualification plan for formal qualification of technical staff members.

- See Subsection 4.6.2 Qualification Plan of this application.

4.6.2.2 Evaluation Criteria

Each technical staff position should require a bachelor degree in the physical or life sciences, or engineering. An equivalent combination of education and experience may substitute for the degree.

The program should have a written qualification plan. It should address job specific training and experience. The plan should specify the qualification procedures, including times for completing requirements. It should address the credentialing of individuals qualified to work independently. The plan should provide for interim qualification and certification by the State Program Director, or designee. Inspection Manual 1248, *Formal Qualifications Program for Federal and State Material and Environmental Management Programs*, may be used as general guidance.

- See Subsection 4.6.2 URP Position Descriptions and Qualification Plan.

4.6.3 Qualification of Current Technical Staff

The program staff qualifications should cover both routine functions and emergency cases. The distribution of staff qualifications and the distribution of licensees transferred should match. For example, there should be enough inspectors qualified to inspect industrial radiography licensees that a backlog of industrial radiography inspections will develop.

- See Subsection 4.6.3 of this application.

4.6.3.1 Information Needed

The State should submit the resume of each current member of the technical staff. The resume should, as a minimum, show the educational level, experience, and any specialized training. For staff members admitted into training courses not yet completed, submit the course name or description and scheduled dates. For each current staff member, identify the individual's qualifications under the State's written qualification plan.

- See Section 4.6.3 of this application.

4.6.3.2 Evaluation Criteria

Except for some junior positions, all staff members should meet the program's own qualification requirements.

The review team may consider the State's experience working with the NRC inspectors and license reviewers. It may also consider experience regulating non-Agreement materials and machine-produced sources of radiation.

- See Subsection 4.6.3of this application

Subsection 4.6.1
Technical Staffing Organization

Department of Environmental Quality

WYOMING

4.6.1 Technical Staff Organization

The Wyoming Department of Environmental Quality (WDEQ) has conducted an analysis of the expected workload, and established an appropriate staffing plan. In determining the staffing plan the WDEQ relied on workload projections from the Nuclear Regulatory Commission (NRC), other Agreement States, and comments received on Wyoming's initial Draft Agreement Application. It is estimated that at the time of the Agreement, the State would assume regulatory authority over 12 to 14 licensees: five operating ISR licensees, one licensee on standby, up to seven licensees undergoing decommissioning, and one new licensee. Before the Agreement is finalized, the URP anticipates two of the decommissioning licensees will be transferred to the DOE, which is why we are projecting between 12 and 14 licenses.

To accommodate the workload Wyoming projected in prior feasibility studies the need of 8 FTE (13,632 hrs.). The feasibility study estimated that an additional 5 FTE (8,520 hrs) would be required to staff the newly created Uranium Recovery Program (URP). Additionally the URP would use 3 FTE (5,112 hrs) from the existing Land Quality Division (LQD) workforce that were already regulating the permit to mine process for uranium. The 3 FTE (5,112 hrs.) are not specific individuals but represent billable hours to the equivalent of 5,112 hours, accounting for the LQD expertise in Geology, Hydrogeology, Ecology, Biology, Soil Sciences, and Engineering. The expertise within the URP will primarily be centralized around Health Physics and Geology/Hydrogeology.

The expertise of the URP Program along with the area of effort is presented in Table 1.

Table 1: URP Program Staffing

Name	Position	Area of Effort (%)		
		Admin/ Oversite	Program Representation	Uranium Program (inspections/ review)
Kyle Wendtland*	LQD Administrator	25%		
Ryan Schierman	Program Manager	40%	20%	40%
David Adams	Health Physicist			100%
Brandi O'Brien	Health Physicist			100%
Alan Thompson	Geologist			100%
Reid Brown	Hydrologist/Geochemist			100%
3 LQD (5,112 hrs.)	Multiple Disciplines			100%
Totals		**0.4 FTE (682 hrs)**	**0.2 FTE (341 hrs)**	**7.4 FTE (12,610 hrs)**

* LQD Administrator time not billed to the URP program

WDEQ determined staffing needs based upon an available 1704 hours per employee, per year, as seen in Table 2 below. For the 2017 fiscal year the NRC uses 1,500 hours as an equivalent to 1 FTE. Since the State and the NRC differ in their definition of FTE, the State will also put the dedicated hours along with the FTE such that comparisons can be made.

Table 2: Hours Per FTE

Staff Hours/Year = 52 weeks x 5 days/week x 8 hours/day = 2080 hours	
Description of Leave	Hours
10 holidays	80
15 vacation days	120
10 days of training	80
12 sick days	96
Hours a Year per FTE	**1704**

To estimate the URP inspection workload, the WDEQ consulted with the NRC Region 4 Offices, considered NRC comments on the Draft Application, and considered the estimated traveling distances between the URP's office in Cheyenne, Wyoming and the regulated facilities. WDEQ determined 1.80 FTE (3,069 hrs.) would be necessary for inspection-related activities. This was a conservative estimate, and justification of the estimate is shown in Table 3, below.

Estimating inspection resources on sites undergoing decommissioning was complicated by the fact that at least two sites (Anadarko Bear Creek and Western Nuclear Split Rock) have the potential to be transferred to the DOE before the Agreement is reached with the NRC. However, to be conservative Wyoming has included these two sites in its budget calculations. Additionally, in projecting resources for inspections the URP was conservative and budgeted for an inspection annually at sites undergoing decommissioning. Currently NRC inspects these facilities once every two to three years, however to demonstrate the worst case scenario the State choose to budget for a yearly inspection. However, even though the budget is yearly, inspection in actuality will follow NRC guidance and the URP will set inspection frequencies appropriately.

Comparing Wyoming's 1.8 FTE (3,069 hours) to other Agreement State Programs demonstrates that Wyoming's estimations are protective. The most comparable Agreement State relative to FTE estimates is Texas. Texas, according to their 2014 IMPEP report, they have 12 material licenses in varying stages of operation. Wyoming at the time of Agreement will most likely have 12 material licenses in varying stages of operations. The Texas program dedicates 0.7 FTE for inspection of uranium recovery operations, splitting this time between two inspectors. Additionally 0.45 FTE is assigned to the management oversight of the uranium recovery inspection and compliance activities, for a total dedicated 1.15 FTE for inspections. Wyoming's dedicated 1.8 FTE (3,069 hours) for inspections appears to be consistent with the State of Texas.

To estimate the workload for license review and project management workload WDEQ consulted with the NRC's Uranium Recovery Program and received comments on the Draft Application to determine the necessary FTE. In NRC comments on the State’s Draft Application the NRC projected major licensing actions to be roughly 0.77 FTE (1,155 hrs.) for the safety portion of the review, not considering the environmental review. The State originally had proposed 0.5 FTE (852 hrs) projections for the safety review, but after response by NRC the URP changed the projection to 1.0 FTE (1704 hrs.) to cover any additional environmental reviews or hearings. The URP will budget for one new application or major amendment each year. The estimate from the URP will be slightly different than the NRC’s

estimate, considering the State's environmental review is different that the NRC's obligation to comply with the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA). Additional FTE necessary for "minor licensing actions," such as flow increases, were considered as part of project management. The URP, after consultation with the NRC, determined that 0.5 FTE (852 hrs.) per active licensee are required for project management. Additionally, for inactive licensees or licensees undergoing decommissioning, the URP dedicated 0.2 FTE (340 hrs.) for project management. Using the above estimates, WDEQ determined that 5.4 FTE are required by the program for licensing or review. Table 4 below provides justification for this estimate. Lastly, as shown in Table 5 below, WDEQ identifies common licensing actions and how existing LQD staff may help the URP with those reviews.

Table 3 Inspection Workload/Year							
Average Inspections per year	# of staff involved	Hours of Prep before Inspection	Travel Hours for Inspection	Staff Hours at Mine Site	Inspection Write up	Total Hours Per Inspection	Inspection activity hours per year
Energy Fuels Nichols Ranch/Jane Dough-2	2	30	15	24	30	198	396
Uranium One Willow Creek/Moore Ranch-2	2	30	17	24	30	202	404
Cameco Smith Highland/North Butte-2	2	30	10	24	30	188	376
UR Energy Lost Creek-2	2	30	12	24	30	192	384
Strata Ross-2	2	30	15	24	30	198	396
AUC Reno Creek-2	2	30	15	24	30	198	396
Kennecott Sweetwater Mill-1	1	15	7	4	20	56	56
UR Energy Pathfinder Shirley Basin (Active Title II) -1	1	10	8	4	20	42	42
Anadarko, Bear Creek 1	1	10	6	3	15	34	34
Exxon Mobile Highlands 1	1	10	6	3	15	34	34
Pathfinder, Lucky MC 1	1	10	6	3	15	34	34
UMETCO, Gas Hills East 1	1	10	6	3	15	34	34
Western Nuclear, Split Rock	1	10	7	3	15	35	35
Additional Inspection (enforcement/allegation response/ Preoperational Inspections)-2	2	30	12	30	30	184	448
Total Hours							**3069~ 1.80 FTE**

Table 4: License Review/Project Management Workload/Year	
Site	FTE for Project Management or Licensing Activity (hrs.)
Energy Fuels Nichols Ranch-2	0.5
Uranium One Willow Creek/Moore Ranch-2	0.5
Cameco Smith Highland/North Butte-2	0.5
UR Energy Lost Creek-2	0.5
Strata Ross-2	0.5
AUC Reno Creek-2	0.5
Kennecott Sweetwater Mill-1	0.2
UR Energy Pathfinder Shirley Basin (Active Tittle II)	0.2
Anadarko, Bear Creek 1	0.2
Exxon Mobile Highlands 1	0.2
Pathfinder, Lucky MC 1	0.2
UMETCO, Gas Hills East 1	0.2
Western Nuclear, Split Rock 1	0.2
New applications / major licensing actions	1.0
Total Hours	**5.4 FTE**

Table 5 Common License Amendment Request by Type and Level			
Amendment Request	Facility Type	How it will be budgeted	WDEQ involvement
New Application	All	New Application/Major Amendment	LQD, WQD, and URP
ACL's	All	Project Management	LQD, WQD, and URP
Satellite Addition	All	Project Management	LQD and URP
Facility Upgrades	All	Project Management	LQD and URP
Wellfield Package	All	Project Management	LQD
Site Decommissioning Plan	All	Project Management	LQD, WQD, and URP
Groundwater Restoration	All	Project Management	LQD, WQD, and URP
New Tailing Impoundment	Conventional (Heap Leach)	Project Management	LQD, URP, State Engineers Office
Site Closure/License Termination	All	Project Management	LQD, WQD, and URP

Therefore, given the estimated URP workload associated with the limited agreement, WDEQ projects a need for 7.20 FTE. Of this 7.20 FTE, 1.80 FTE will be dedicated to the inspections and 5.4 FTE will be dedicated to license review and project management. To meet this demand as shown in Table 1 the URP will employ four technical positions who will split time between inspections and license review. The program will be comprised of two positions with expertise in Health Physics and two positions with expertise in Geology/Hydrology, three full time equivalent hours from the Land Quality Division with expertise in a range of sciences, and lastly 0.4 FTE of the Program Manager's time for technical evaluation, for a total of 7.4 FTE budgeted resources for technical evaluation, and 0.6 FTE for program oversite and program representation.

Subsection 4.6.2
Formal Qualification Plan

Department of Environmental Quality

WYOMING

Appendix A to Subsection 4.6.2

Uranium Recovery Program Positions Descriptions

Department of Environmental Quality

WYOMING

State of Wyoming

Job Content Questionnaire

POSITION INFORMATION

Agency Number/Name: Department of Environmental Quality Position Number: 7001

Incumbent Name: Ryan Schierman Uranium Recovery Program Manager ENNR13

Supervisor Name: Kyle Wendtland Supervisor Position Number: 4001

TO BE FILLED OUT BY A&I HRD ONLY:

Class Code: Title: Effective Date: (m/d/yyyy)

PURPOSE

Write a brief statement describing the purpose of your job and how it achieves your department's objectives.

Uranium Recovery Program Manager-The URP manager ensures the permitting/licensing and the inspection/enforcment components of the program are adequate esure protection of the public,, the worker, and the environment from the effects of uranium mining while providing for its benificial use.

ESSENTIAL DUTIES

Please break the position into the major job functions or areas of responsibility.
List your major job duties in descending order of importance.
The total of % time should equal 100%.

Duty 1	% of time:
General Management •Responsible for implementing plans and goals of the URP Program so that DEQ mission is met •Organize, plan, and oversee all activities of the URP Program. •Oversee permitting process and track enforcement actions •Effectively communicate justifications for noncompliance to the public and the regulated community •Knowledge of uranium mining and reclamation processes and the ability to review technical information to issue sound permits that meet regulatory guidelines. •In cooperation with the Administrator, sets policy, rules, regulations and guidelines, and engages in planning efforts, budget matters, and personnel issues •Provides project management for special projects, including researching, editing, planning and presenting results •Assists the LQD administrator in budget preparation and is responsible for managing costs.	20

•Monitor Federal legislation and administrative activities relative to land quality and mining issues. •Development of new, and revision of current, agency rules and regulations, SOPs, MOUs, and other Guidance documents related to NRC	

Duty 2	% of time:
Management of URP Program Human Resources •Supervises employees to ensure program goals and objectives are met •Coordinates and perform Performance Management Initiative reviews of URP staff •Manages technical staff in a team approach to meet agency goals •Prioritize work quickly so that deadlines are met while maintaining quality •Train and mentor staff •Review and evaluates the work of employees •Coordinate and Participate in writing public announcements for District staff openings, job descriptions, arrange, coordinate, and conduct interviews and secure necessary DEQ approval to hire staff •Responsible for the hiring and training of staff so that workload demands are met and quality of work is met •Coordinate and complete (or delegate to appropriate staff) special projects as assigned by the DEQ Director or LQD Administrator	20

Duty 3	% of time:
Program Representation •Represent the department to the public in a responsible manner that upholds the values and mission of the department. Consult with legislators. attorneys, engineers, and the public regarding land quality and mining issues •Represent the program by consulting with high level officials in industry, at other state agencies, in the federal government, in non-governmental organizations, and with members of the public •Presents expert testimony on uranium mining issues during hearings and other legal proceedings. •Serve as initial contact for and subsequent liaison with general public enquires and complaints •Serve as the DEP representative at phone conferences and/or meetings with other state and federal agencies Participate in national and regional organizations as appropriate	20

Duty 4	% of time:
2Technical Evaluation •Maintain credentials to be recognized NRC equivalent inspect and license reviewer •Conduct routine and reactive inspection of uranium recovery licensees to determine compliance with regulations and standards. •Generate inspection reports based on information	40

•Use technical knowledge to evaluate technical submissions such as permit applications, license renewals, amendments, radiological surveys, restoration activities, and decommissioning plans. •Compares technical submissions to rules, regulations, or standards. •Applies professional judgment to evaluate industrial processes, facility operational data, technical performance, or other information and makes recommendations based on this evaluation •Analyzes and comprehends operator generated data such as exposure data and using professional judgment ensures operators are in compliance and are maintaining exposures as low as is reasonably achievable (ALARA). Develop regulation and guidance for the regulated community	

Duty 5	% of time:
	0

Duty 6	% of time:
	0

Duty 7	% of time:
	0

Duty 8	% of time:
	0

SUPERVISION

Do you have responsibility for hiring, performance appraisal, and disciplinary action?

☐ NO ☒ YES Total Number of Positions: 5

If yes, please list **(press CTRL + TAB to move across columns, press ENTER to add a new row)**.

Position #	Class Code	Title	Incumbent Name
Per legislation will be filled over the next few years			

WORK DIRECTION

Do you direct the work (e.g. train, assign, or review work) of employees and/or nonemployees (ie external contractors, inmates, etc) you do not formally supervise?

☐ NO ☒ YES Total Number of Positions: _____

If yes, please list **(press CTRL + TAB to move across columns, press ENTER to add a new row)**.

Position #	Class Code	Title	Incumbent Name
7002 BAAS-06 7003-ENNR11 Health Physicist 7004-ENNR11 Health Physicist 7005-ENGE10 Project Geologist 7006-ENNR10 Hydrogeologist 3 existing from LQD 04 program to be determined			

If this position manages or provides work direction to other employees, please select the best description(s) for the level of direction that is provided. Select all that apply.

- ☒ Distribute work to employees.
- ☒ Review other employees' work output.
- ☒ Train new employees.
- ☒ Work with employees on professional/personal development.
- ☒ Hire employees.
- ☒ Communicate disciplinary actions/issues to employees.
- ☒ Prepare and deliver performance management reviews to employees.
- ☒ Provide complete supervision (all of the above).

FINANCIAL RESPONSIBLITY

(select up to two)

- ☒ This position is responsible for setting and controlling a budget.
- ☐ This position has input into setting a budget.
- ☒ This position is responsible for staying within an assigned budget.
- ☐ This position does not have budget responsibility.

Amount

- ☐ up to $100,000
- ☐ $100,000 to $250,000
- ☐ $250,000 to $500,000
- ☐ $500,000 to $1,000,000
- ☒ $1,000,000 to $2,500,000
- ☐ $2,500,000 to $5,000,000
- ☐ $5,000,000 to $10,000,000
- ☐ $10,000,000 to $25,000,000
- ☐ $25,000,000 to $50,000,000
- ☐ $50,000,000 to $100,000,000
- ☐ $100,000,000 to $500,000,000
- ☐ $500,000,000 +

AUTHORITY

Please identify the types of decisions that this position has the power to make, as well as those that must be referred to a supervisor. In both cases include authority for decisions regarding issues of policy and procedure, administrative matters, personnel and budgetary responsibility.

What typical decisions does this position have **total authority for making?**

•Day to day operations of the URP program

•Perform and finalize performance appraisals for staff

•Assign/set all NRC staff duties (permit coordination, inspections, compliance, annual report reviews), and day to day decisions relating to such

•Determining the course of action in terms of compliance concerns, i.e. Maintenance items, Conference and Conciliation, Minor Notices of Violation, Notices of Violation, determine penalty amounts and compliance requirements in settlement agreements for violations

•Finalize violations for Directors signature

•Write and sign violations and terminate them when compliance auctions are completed

•Finalize reclamation bond calculations for Directors signature

What typical decisions does this position **refer to others for approval**?

CHALLENGES

Describe the most typical and the most complex problems that are faced in this position.

Typical problems

•Different issues are presented each day that require a determination on how to resolve these concerns and the decision that need to be made.

•The dynamic nature of mining and the diversity of people and operations require daily critical decisions related to permitting, inspections and enforcement. Making these decisions is not always easy they are often unique to each situation

•Managing the workload, and delegation/distributing this workload in a consistent and fair fashion amongst staff, setting priorities, and keeping the staff motivated to work efficiently to complete an ever-increasing workload

•Examples of technical compliance issues at non-coal operations that represent typical problems: Applicants not staying within approved acreage, lack of topsoil salvage and protection, applicants not being familiar with permitting requirements, not following the approved mine and reclamation plans, submitting incomplete or inaccurate annual reports

•Dealing with different personalities and understanding the corporate mentality of different operators

•Ensuring Program/Office runs smoothly

Most complex challenge(s)

Some examples of the most complex human resource challenges may include:

•Supervising staff and the human resource responsibilities and energy needed for this job responsibility

•Equitable distribution of staff workloads, and prioritizing workloads within staff, regarding routine job duties (application reviews, inspections, compliance, annual report (reviews), versus allowing staff time to assist with broader program needs, special projects (such as assist division with updating guidance documents) and/or participating on various workgroups

Some examples of the most complex technical challenges might include:

•Keeping track of URP, ensuring that reviews, inspections, and compliance actions are completed within required timeframes

•Performing geology and groundwater reviews for uranium in-situ applications; processing in-situ applications

•Communicating and following the appropriate procedures for all appropriate federal, state, and local agencies

•Knowing and understanding the various rules and regulations for the NRC and Uranium mining that occurs in Wyoming, and being able to interpret and enforce these regulations, in light of their original intent and with consistency

Some examples of the most complex cross-agency challenges might include:

•Facilitating and encouraging timely decision-making with management as well as with staff/management of other governmental entities

•Accommodating or reconciling other agency's requirements that may conflict with, or are inconsistent with NRC requirements.

EDUCATION, CERTIFICATION AND LICENSING

Describe any formal education, licensure, registration, certificate, or professional affiliation **REQUIRED** to perform your job.

The most appropriate minimum education for this position is a Bachelors degreee and a Maters degreee or equivalent work experience would be preferred. The most appropriate level of experience for this position is 6 to 8 years plus education listed above.

KNOWLEDGE, SKILLS, ABILITIES AND COMPETENCIES

List the technical or specialized knowledge, skills, abilities and competencies required for effective functioning in this job.

Communication- Delivers clear, timely, effective transmission of information and takes responsibility for understanding others. Uses skill in presenting information, analysis, ideas, and positions in a clear, concise, accurate, and convincing manner, as it is appropriate with the audience. Recognizing the individual's roles as a representative of the State of Wyoming and presenting personal views. The ability to assess a situation, determine the objectives, and give clear, concise, well-organized, convincing message that will best meet the objective. This level of communication is evidenced by strong written and verbal communication skills with proficiency to explain complex technical and regulatory issues to a diverse audience, or by the ability to review technical information and condense that review into a summary understandable to the lay public.

Customer Service- Customer service is a commitment to continuous improvement of services working with customers in a consistent, appropriate, and timely manner. Builds and maintains customer satisfaction with the services offered by the organization. Seeking ways to improve service delivery. This may involve assessing the organization and its services from the customer's point of view emphasizing a team approach to providing great customer service, and recognizing adverse customer reactions and identifying better alternatives.

Judgment and Decision Making- Makes timely, informed determinations, resolutions, or conclusions that take into account the facts, goals, constraints, risks, mission, and vision of the State of Wyoming. Obtains information and identifies key issues and implications while balancing analysis, wisdom, experience, and perspective as well as alternative solutions. Distinguishes between relevant and irrelevant information and consults others, when appropriate. This involves going beyond analyzing factual information to develop a conceptual understanding for the meaning of a range of information. This level of decision making integrates diverse themes and lines of reasoning to create new insights or levels of understanding for the issue at hand. To achieve this, the ability to think in terms of generalized models rather than concrete details is required, necessary decisions must be made even when information is limited or unclear.

Team Player- Works with and helps others to accomplish goals and deliverables through willing participation, cooperation, motivation, encouragement, collaborative effort, and commitment. Acknowledge and celebrates the achievements others as well as involves everyone (i.e. own work units, sections, divisions, department as well as others_ and recognizes individual's role and limitations. This involves joint ownership of goal setting, commitments, and accomplishments. This done affectively when everyone on the team is involved and a balance between building rapport and getting the work done is realized.

Personal Effectiveness- Earns others trust and respect through consistent honesty and professionalism in all interactions. Displays and promotes high standards of ethical conduct and behaviors consistent with the State of Wyoming. Keeps promises and commitments made to others. Avoids situations and actions considered inappropriate or which represent a conflict of interest. Adjust timeliness, results, and expectations appropriately to changing needs. Focuses on results and desired outcomes and how best to achieve them. Overcomes obstacles to achieve results. This involves minimum supervision and is self-directed within the scope of his/her accountabilities. Willingly puts in extra time and effort in crisis situations. Goes the "extra mile" to ensure the goal is met. Meets and exceeds deadlines through efficiency.

Leadership- Develops and uses effective strategies, change management, and interpersonal skills to influence and promote others toward the accomplishment of identified objectives, as well as organizational mission and goals. Holds self and others accountable for achieving established performance expectations. Manages and resolves conflicts and disagreement in a constructive manner. Deals effectively with pressure; remains optimistic and persistent, even under adversity. Effectively manages people, technology, legal, and other resources to achieve outcomes. This involves setting clear, meaningful, challenging, and attainable group goals, and expectations that are aligned with the organization. Suggests and asks for other's ideas to improve quality, efficiency, and effectiveness. Balances guiding the other's actions with granting authority for decision-making within set limits. Provides direction without micromanaging. Proactively identifies potential risks and develops plans and implements measures to avoid, mitigate, or minimize risk. Identifies current and future resource needs based on organizational goals, priorities, competing resource needs across initiatives and budget realities.

Developing others- To create, produce, and implement strategies that optimize individual performance within the organization. Creates the foundation and ability of others to perform, grow, and successfully contribute to the organization by providing ongoing feedback, encouragement, as well as providing opportunities to learn through formal and informal methods. Fosters an inclusive workplace where diversity and individual differences are valued and leveraged to achieve the vision and mission of the organization. Ensures that employees are appropriately recruited, selected, appraised, and rewarded; takes action to address performance problems. This involves evaluation progress and success against performance. Resolves deficiencies and challenges. Ensures deadlines are met and keeps stakeholders informed. Leads by example for professional behavior. Helps those in need of assistance. Shows dedication. Encourages repeating and building upon areas of strength and dissects areas of improvement. Suggests methods and examples for performance. Models successful behavior, high work ethic, and self-improvement.

SIGNATURE PAGE
Job Content Questionnaire

By signing this document, I am acknowledging that to the best of my knowledge, this is a true, accurate and complete description of my position.

Employee Signature — Date: 8/28/17

Supervisor Signature — Date: 9/5/17

Agency Human Resources Signature — Date: 9/6/17

State of Wyoming

Job Content Questionnaire

NRC

POSITION INFORMATION

Agency Number/Name: 020/Department of Environmental Quality Position Number: 7002

Incumbent Name: Vacant - Administrative Assistant II

Supervisor Name: Vacant Supervisor Position Number:

TO BE FILLED OUT BY A&I HRD ONLY:

Class Code: BAAS06 Title: Administrative Assistant II Effective Date: (m/d/yyyy)

PURPOSE

Write a brief statement describing the purpose of your job and how it achieves your department's objectives.

The position performs administrative duties for the NRC Program and the NRC program manager. Position assists in the preparation of all work products prepared by and for the NRC program staff during the permitting and oversite process; which consist of permits, waivers, public notices, and invoices. Manages all recordkeeping, and filing systems for the NRC permitting program; directly supports the NRC Program Manager as well as other NRC program staff. The position performs office support activities in accordance with established guidelines and procedures and supports 7 staff members.

ESSENTIAL DUTIES

Please break the position into the major job functions or areas of responsibility.
List your major job duties in descending order of importance.
The total of % time should equal 100%.

Duty 1	% of time:
Provides administrative support for all the activites of the NRC program, including filing, copying and reception duties.	35

Duty 2	% of time:
Provide support for all activities associated with the NRC program, including: proofreading and editing proposed rule packages for consistency and clarity; making meeting and travel arrangements; prepare public notices; assemble proposed rule packages for distribution; compile final rules for the Governor's signature; and organize and maintain rule packages and related records for access by authorizing federal agencies, staff, and the public.	20

Duty 3	% of time:
Coordinate the provision of, and payment for the supplies, including: general office supplies; specialized field equipment; materials for IT equipment. Maintain records for Accounting Department.	15

Duty 4	% of time:
Maintain all permit documentation required by state and federal statutes, regulations, and program procedures. Works cooperatively with program manager to establish and, as needed, revise filing procedures. Ensure that all critical correspondence related to permitting, permit applications, and compliance certifications is maintained and readily available. Assure integrity of paper and electronic files while allowing for frequent staff and public access. Keep up to date on state requirements and procedures for archiving; ensure program procedures and practices are in compliance. Review files periodically; archive records in accordance with procedures and use the RIMS system to enter new records to the State Archive system and complete any other needed archiving tasks.	1 0

Duty 5	% of time:
Miscellaneous: Assist staff with travel arrangements, training and conference registrations, and voucher preparation as needed. Maintains calendars, makes appointments and travel arrangements, arranges meeting rooms. Orders, receives, stores and distributes supplies; maintains inventory. Maintain office supplies and equipment as needed by staff. Reconcile procurement statements with actual purchases; prepare coding for purchases in accordance with Division and State requirements. Assist other programs with sorting, filing, and mass mailings. Act as back up for other Department administrative staff. Provide general customer service to permittees, visitors, and internal staff.	2 0

Duty 6	% of time:
	0

Duty 7	% of time:
	0

Duty 8	% of time:
	0

SUPERVISION

Do you have responsibility for hiring, performance appraisal, and disciplinary action?

☒ NO ☐ YES Total Number of Positions: _____

If yes, please list **(press CTRL + TAB to move across columns, press ENTER to add a new row)**.

Position #	Class Code	Title	Incumbent Name

WORK DIRECTION

Do you direct the work (e.g. train, assign, or review work) of employees and/or nonemployees (ie external contractors, inmates, etc) you do not formally supervise?

☒ NO ☐ YES Total Number of Positions: _____

If yes, please list **(press CTRL + TAB to move across columns, press ENTER to add a new row)**.

Position #	Class Code	Title	Incumbent Name

If this position manages or provides work direction to other employees, please select the best description(s) for the level of direction that is provided. Select all that apply.

- ☒ Distribute work to employees.
- ☐ Review other employees' work output.
- ☒ Train new employees.
- ☐ Work with employees on professional/personal development.
- ☐ Hire employees.
- ☐ Communicate disciplinary actions/issues to employees.
- ☐ Prepare and deliver performance management reviews to employees.
- ☐ Provide complete supervision (all of the above).

FINANCIAL RESPONSIBLITY

(select up to two)

- ☐ This position is responsible for setting and controlling a budget.
- ☐ This position has input into setting a budget.
- ☐ This position is responsible for staying within an assigned budget.
- ☒ This position does not have budget responsibility.

Amount

- ☐ up to $100,000
- ☐ $100,000 to $250,000
- ☐ $250,000 to $500,000
- ☐ $500,000 to $1,000,000
- ☐ $1,000,000 to $2,500,000
- ☐ $2,500,000 to $5,000,000
- ☐ $5,000,000 to $10,000,000
- ☐ $10,000,000 to $25,000,000
- ☐ $25,000,000 to $50,000,000
- ☐ $50,000,000 to $100,000,000
- ☐ $100,000,000 to $500,000,000
- ☐ $500,000,000 +

AUTHORITY

Please identify the types of decisions that this position has the power to make, as well as those that must be referred to a supervisor. In both cases include authority for decisions regarding issues of policy and procedure, administrative matters, personnel and budgetary responsibility.

What typical decisions does this position have **total authority for making?** Support and purchase decisions which are necessary for daily work.
What typical decisions does this position **refer to others for approval**? All non staff support issues.

CHALLENGES

Describe the most typical and the most complex problems that are faced in this position.

Typical problems Dealing with the public and a need for staff as the new program is developed.
Most complex challenge(s) Managing a very high level of detail and support for a new regulatory program. Ensuring that current and historical data and documentation is maintained accurately in both electronic and paper information systems.

EDUCATION, CERTIFICATION AND LICENSING

Describe any formal education, licensure, registration, certificate, or professional affiliation **REQUIRED** to perform your job.

Training and experience in routine office tasks and use of standard office equipment; computer software which supports office functions,such as Microsoft Office Professional; and writing and organizing office documentation. Position needs 3-5 years experience in a staff support function.

KNOWLEDGE, SKILLS, ABILITIES AND COMPETENCIES

List the technical or specialized knowledge, skills, abilities and competencies required for effective functioning in this job.

Strong organizational and time management skills. Ability to learn, develop, and apply detailed procedures related to highly regulated programs and processes. Pleasant and professional manner to interact and respond to staff, other agencies, and the public in person, in email, and on the phone. Strong communication skills.

Knowledge of word processing, database, and spreadsheet software to be able to manipulate and create documents, tables, mailings, and reports. Comfortable and competent with the use of databases for electronic tracking and email systems.

Ability to develop and maintain filing and archiving systems to meet regulatory and policy requirements and organize files logically for ready staff and public access. Knowledge of records processing and maintenance procedures and systems.

Very strong attention to detail. Ability to review the written work of others for clarity and completeness. Ability to remain calm and professional when dealing with angry or upset individuals. Ability to perform assigned duties and apply program procedures and policies with minimal supervision.

Knowledge of administrative, clerical, and filing procedures.

Knowledge of techniques for providing a high level of customer service.

Ability to learn and apply department and state government procurement methods and procedures.

SIGNATURE PAGE
Job Content Questionnaire

By signing this document, I am acknowledging that to the best of my knowledge, this is a true, accurate and complete description of my position.

Vacant

Employee Signature | Date

Vacant

Supervisor Signature | Date

Agency Human Resources Signature | Date 3/5/15

State of Wyoming

Job Content Questionnaire

POSITION INFORMATION

Agency Number/Name: Department of Environmental Quality Position Number: 7003

Incumbent Name: Brandi O'Brien

Supervisor Name: Ryan Schierman Supervisor Position Number: 7001

TO BE FILLED OUT BY A&I HRD ONLY:

Class Code: Title: Effective Date: (m/d/yyyy)

PURPOSE

Write a brief statement describing the purpose of your job and how it achieves your department's objectives.

Under the direction of the Legislature and the Govenor the state of Wyoming is establishing a Nuclear Regulatory Program within the Department of Environmental Quality/ Land Quality Division, to assume primacy from the Federal Nuclear Regulator Program. The program's purpose is to protect the public, the worker, and the environment from the effects of ionizing radiation and other health concerns associated with uranium recovery while providing for the benificial use of such radioactive material. This position upholds the mission by technically evaluating the radilogical hazards associated with new, operating, or standby uranium recovery operations. This includes reviewing technical submissions such as permit applications, license renewals, amendments, radiological surveys and reports, environmental impact statements, and decomissioning plans. Additionally this position supports the licensee by developing and implementing regulatory guidance and standards and effectively communicating those to industry. Lastly this position interacts with the public by listening, educating, and informing the general public of the activites associated with uranium recovery.

ESSENTIAL DUTIES

Please break the position into the major job functions or areas of responsibility.
List your major job duties in descending order of importance.
The total of % time should equal 100%.

Duty 1	% of time:
Using knowledge of radiological principles employee reviews technical submisssions such as permit applications, license renewals, amendments, radiological surveys, environmental impact statements, and decomissioning plans. Compares submissions to rules, regulations, or standards and reports items to the program manager with recommendations for actions.Apply professional judgment (accepted health physics knowledge and accepted radiological safety practices) to evaluate industrial processes, facility operational data, technical performance, or other information and makes recommendations based on the results. Analyzes and comprehends operator generated data such as (environmental monitoring data and exposure data) and using professional judgments ensure operators are in compliance and are maintaining exposures as low as reasonably achievable ALARA. Develop regulations and guidance for the regulated community. Has limited decision authority within parameters defined by the uranium program manager. Instructs staff on	35

Has limited decision authority within parameters defined by the uranium program manager. Instructs staff on the use and theory of radiological detection equipment and practices.	

Duty 2	% of time:
Conducts routine and reactive inspection of uranium recovery licencees to determine compliance with rules, regulation and standards. Generates inspection reports based on information and provides these reports and recommendations to the program manager. Issue violations when noncompliance is identified and effectively communicate the justifications for notice of violation to the licensee.Oversees and manages the effectiveness and timeliness of inspections of licensees.	20

Duty 3	% of time:
The position will be required to work with industry to resolve items of concern and create a more effevtive regulatory scheme. This may include chairing the Uranium Work Group. This duty requires that the position has a great understanding of the uranium recovery operations such that they can represent DEQ interests in conversations with the regulated community.	15

Duty 4	% of time:
Be able to obtain and maintain training to become a NRC recognized inspector of facilities and reviewer of licenses.Additionally this job requires continual advancement in understanding of health physic principals. Employee should be working towards certification to become a professional health physicist such as certification as a certified health physicist CHP or radiation professional NRRPT.	10

Duty 5	% of time:
Responsible for developing and overseeing the training program to be used by URP employees ensuring that the study material meets NRC requirements and covers the needs of Wyoming DEQ. This includes assigning appropriate reading assignments and creating quizes to ensure comprehension.	10

Duty 6	% of time:
WYDEQ will rely on this positions knowledge and grasp of health physics principles in matters beyond uranium recovery operations. This position is expected to provide technical guidance to other WYDEQ personnell such that they can make accurate decisions on matters concerning other radiological material. This may also require presenting and communicating complex radiological concepts to members of the legislature and other state government officials at the request of the Director of DEQ.	5

Duty 7	% of time:
Analyze and respond to public coments, observations, and complaints regarding licensed users. Provide comment, training, support , and corrective action when necessary.Represent the department to the public in a responsible manner that upholds the values and mission of the department	5

Duty 8	% of time:
.	0

SUPERVISION

Do you have responsibility for hiring, performance appraisal, and disciplinary action?

☒ NO ☐ YES Total Number of Positions: _____

If yes, please list **(press CTRL + TAB to move across columns, press ENTER to add a new row)**.

Position #	Class Code	Title	Incumbent Name
Yet to be classified			

WORK DIRECTION

Do you direct the work (e.g. train, assign, or review work) of employees and/or nonemployees (ie external contractors, inmates, etc) you do not formally supervise?

☐ NO ☒ YES Total Number of Positions: 3

If yes, please list **(press CTRL + TAB to move across columns, press ENTER to add a new row)**.

Position #	Class Code	Title	Incumbent Name
This position will be overseeing the inspection program to ensure a technically accurate and efficient program. This will include scheduling inspections and directing who attends each inspection. Additionally all inspection reports will flow through this positon and direction will be given on content of each report.			

If this position manages or provides work direction to other employees, please select the best description(s) for the level of direction that is provided. Select all that apply.

☒ Distribute work to employees.
☒ Review other employees' work output.
☒ Train new employees.
☒ Work with employees on professional/personal development.
☐ Hire employees.
☐ Communicate disciplinary actions/issues to employees.
☐ Prepare and deliver performance management reviews to employees.
☐ Provide complete supervision (all of the above).

FINANCIAL RESPONSIBLITY

(select up to two)

☐ This position is responsible for setting and controlling a budget.
☒ This position has input into setting a budget.
☒ This position is responsible for staying within an assigned budget.
☐ This position does not have budget responsibility.

Amount

☐ up to $100,000
☐ $100,000 to $250,000
☐ $250,000 to $500,000
☒ $500,000 to $1,000,000
☐ $1,000,000 to $2,500,000
☐ $2,500,000 to $5,000,000
☐ $5,000,000 to $10,000,000
☐ $10,000,000 to $25,000,000
☐ $25,000,000 to $50,000,000
☐ $50,000,000 to $100,000,000
☐ $100,000,000 to $500,000,000
☐ $500,000,000 +

AUTHORITY

Please identify the types of decisions that this position has the power to make, as well as those that must be referred to a supervisor. In both cases include authority for decisions regarding issues of policy and procedure, administrative matters, personnel and budgetary responsibility.

What typical decisions does this position have **total authority for making?**
Employee in this position have defined decision making authority within bounds established by supervisor

1) Independent authority to conduct compliance inspections at regulated facilities.
2) Independent authority to work with regulated facilities to resolve non compliance issues within regulatory framework.
3) Independent authority to request revisions to reports submitted as part of routine regulatory requirments.
4) Independent authority to approve activities determined to be clearly compliant with well-established regulatory requirments.
5) Independent authority to review egineering design and construction plans

What typical decisions does this position **refer to others for approval**?

1) Approval of activities deviating from specific, well established regulatory requirments
2) Final determination of non-compliance with regulatory requirments are made by the agency Administrator
3) Final approval of means/methods for resolving non compliance with regulatory requirments are made by supervisor or agency management
4) Pursuit of enforcement actions against regulated entities is the decision of the agency Administrator
5) Routine and non-routine projects and work tasks are assigned by supervisor
6) Approval for training expenditures are made by agency management.

CHALLENGES

Describe the most typical and the most complex problems that are faced in this position.

Typical problems
Day to day challenges include but are not limited to: completing consistent, periodic compliance assessments on regulated entities; resolve complaints or non comliant situations where regulated entities, business, and private citizens are unaware of , misunderstand, or ignore applicable environmental regulatory requirements.;obtaining correct, appropriate information in submitted compliance related reports so that regulatory compliance may be assessed; staying current with, obtaining professional training in, and assessing compliance with new, changing, and more complex environemntal regulations;and use of database to assist in assuring compliance with a wide variety of requirements.Review of complex engineering designs.

Most complex challenge(s)
Implementing standards and regulations when users willfully refuse to follow guidance.

EDUCATION, CERTIFICATION AND LICENSING

Describe any formal education, licensure, registration, certificate, or professional affiliation **REQUIRED** to perform your job.

Basic Requirments
Degreee: A bachelor degree from an accredited college or university in natural science or engineering that included at least 30 semester hours in health physics, engineering, radiological science, chemistry, physics, biology, mathematics, and or calculus.

Work Experience: Two years of work experience in applied health physics.

OR

Education and Experience Substitution: 6-8 years of work experience or education in applied health physics with an aquired knowledge level equivalent to theat of a Radiological Engineering Manager. Typically two years of education is equivalent to 1 year of work experience.

KNOWLEDGE, SKILLS, ABILITIES AND COMPETENCIES

List the technical or specialized knowledge, skills, abilities and competencies required for effective functioning in this job.

Knowledge of the principles, theories, and practices of health physics/radiological protection sufficient to (1) perform technical review of health physics/radiological aspects of licensee actions and 2) develop regulatory criteria,guidance, and technical positions related to radiation protection /health physics

Demonstrated knowledge of NRC and Wyoming rules and regulations related to radiation protection aspects in the licensing and inspection of byproduct source mateiral

Knowledge of theory and application of radiation detetection devices. Understanding of detection limits and uncertainties in obtaining field data.

Demonstrate ability to manage all aspects of complex project development, cordination, review, scheduling etc

Ability to clearly communicate complex technical analyses, issues, and recommendations both orally and written.

Knowledge of analytical methods and techniques as applied to NRC and WYDEQ management

Ability to prioritize work quickly so that deadlines are met while maintaining quality

Abilty to train staff and manage different program areas.

SIGNATURE PAGE
Job Content Questionnaire

By signing this document, I am acknowledging that to the best of my knowledge, this is a true, accurate and complete description of my position.

Brandi O'Brien — 6/23/2017

Employee Signature — Date

Ryan Sherman — 6/23/2017

Supervisor Signature — Date

Cynthia Hayden — 6-26-17

Agency Human Resources Signature — Date

State of Wyoming

Job Content Questionnaire

POSITION INFORMATION

Agency Number/Name: Department of Environmental Quality Position Number: 7004

Incumbent Name: David Adams

Supervisor Name: Ryan Schierman Supervisor Position Number: 7001

TO BE FILLED OUT BY A&I HRD ONLY:

Class Code: Title: Effective Date: (m/d/yyyy)

PURPOSE

Write a brief statement describing the purpose of your job and how it achieves your department's objectives.

Under the direction of the Legislature and the Govenor the state of Wyoming is establishing a Nuclear Regulatory Program within the Department of Environmental Quality/ Land Quality Division, to assume primacy from the Federal Nuclear Regulator Program. The program's purpose is to protect the public, the worker, and the environment from the effects of ionizing radiation and other health concerns associated with uranium recovery while providing for the benificial use of such radioactive material. This position upholds the mission by technically evaluating the radilogical hazards associated with new, operating, or standby uranium recovery operations. This includes reviewing technical submissions such as permit applications, license renewals, amendments, radiological surveys and reports, environmental impact statements, and decomissioning plans. Additionally this position supports the licensee by developing and implementing regulatory guidance and standards and effectively communicating those to industry. Lastly this position interacts with the public by listening, educating, and informing the general public of the activites associated with uranium recovery.

ESSENTIAL DUTIES

Please break the position into the major job functions or areas of responsibility.
List your major job duties in descending order of importance.
The total of % time should equal 100%.

Duty 1	% of time:
Using knowledge of radiological principles employee reviews technical submisssions such as permit applications, license renewals, amendments, radiological surveys, environmental impact statements, and decomissioning plans. Compares submissions to rules, regulations, or standards and reports items to the program manager with recommendations for actions.Apply professional judgment (accepted health physics knowledge and accepted radiological safety practices) to evaluate industrial processes, facility operational data, technical performance, or other information and makes recommendations based on the results. Analyzes and comprehends operator generated data such as (environmental monitoring data and exposure data) and using professional judgments ensure operators are in compliance and are maintaining exposures as low as reasonably achievable ALARA. Develop regulations and guidance for the regulated community.	35

the use and theory of radiological detection equipment and practices. This position oversees and manages the licensing program.	

Duty 2	% of time:
Conducts routine and reactive inspection of uranium recovery licencees to determine compliance with rules, regulation and standards. Generates inspection reports based on information and provides these reports and recommendations to the program manager. Issue violations when noncompliance is identified and effectively communicate the justifications for notice of violation to the licensee.	20

Duty 3	% of time:
The position will be required to work with industry to resolve items of concern and create a more effevtive regulatory scheme. This may include chairing the Uranium Work Group. This duty requires that the position has a great understanding of the uranium recovery operations such that they can represent DEQ interests in conversations with the regulated community.	15

Duty 4	% of time:
Be able to obtain and maintain training to become a NRC recognized inspector of facilities and reviewer of licenses.Additionally this job requires continual advancement in understanding of health physic principals. Employee should be working towards certification to become a professional health physicist such as certification as a certified health physicist CHP or radiation professional NRRPT.	10

Duty 5	% of time:
Responsible for developing and overseeing the training program to be used by URP employees ensuring that the study material meets NRC requirements and covers the needs of Wyoming DEQ. This includes assigning appropriate reading assignments and creating quizes to ensure comprehension.	10

Duty 6	% of time:
WYDEQ will rely on this positions knowledge and grasp of health physics principles in matters beyond uranium recovery operations. This position is expected to provide technical guidance to other WYDEQ personnell such that they can make accurate decisions on matters concerning other radiological material. This may also require presenting and communicating complex radiological concepts to members of the legislature and other state government officials at the request of the Director of DEQ.	5

Duty 7	% of time:
Analyze and respond to public coments, observations, and complaints regarding licensed users. Provide comment, training, support , and corrective action when necessary.Represent the department to the public in a responsible manner that upholds the values and mission of the department	5

Duty 8	% of time:
.	0

SUPERVISION

Do you have responsibility for hiring, performance appraisal, and disciplinary action?

☒ NO ☐ YES Total Number of Positions: _____

If yes, please list **(press CTRL + TAB to move across columns, press ENTER to add a new row)**.

Position #	Class Code	Title	Incumbent Name
Yet to be classified			

WORK DIRECTION

Do you direct the work (e.g. train, assign, or review work) of employees and/or nonemployees (ie external contractors, inmates, etc) you do not formally supervise?

☐ NO ☒ YES Total Number of Positions: 3

If yes, please list **(press CTRL + TAB to move across columns, press ENTER to add a new row)**.

Position #	Class Code	Title	Incumbent Name
This position manages and oversees the licensing program. This includes deligating areas of review for each permit, application, or amendment. Additionally this position ensures that the licensing efforts are carried out uniformily over all of the regulated community.			

If this position manages or provides work direction to other employees, please select the best description(s) for the level of direction that is provided. Select all that apply.

☒ Distribute work to employees.
☒ Review other employees' work output.
☒ Train new employees.
☒ Work with employees on professional/personal development.
☐ Hire employees.
☐ Communicate disciplinary actions/issues to employees.
☐ Prepare and deliver performance management reviews to employees.
☐ Provide complete supervision (all of the above).

FINANCIAL RESPONSIBLITY

(select up to two)

☐ This position is responsible for setting and controlling a budget.
☒ This position has input into setting a budget.
☒ This position is responsible for staying within an assigned budget.
☐ This position does not have budget responsibility.

Amount

☐ up to $100,000
☐ $100,000 to $250,000
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☐ $5,000,000 to $10,000,000
☐ $10,000,000 to $25,000,000
☐ $25,000,000 to $50,000,000
☐ $50,000,000 to $100,000,000
☐ $100,000,000 to $500,000,000
☐ $500,000,000 +

AUTHORITY

Please identify the types of decisions that this position has the power to make, as well as those that must be referred to a supervisor. In both cases include authority for decisions regarding issues of policy and procedure, administrative matters, personnel and budgetary responsibility.

What typical decisions does this position have **total authority for making?** Employee in this position have defined decision making authority within bounds established by supervisor 1) Independent authority to conduct compliance inspections at regulated facilities. 2) Independent authority to work with regulated facilities to resolve non compliance issues within regulatory framework. 3) Independent authority to request revisions to reports submitted as part of routine regulatory requirments. 4) Independent authority to approve activities determined to be clearly compliant with well-established regulatory requirments. 5) Independent authority to review egineering design and construction plans
What typical decisions does this position **refer to others for approval**? 1) Approval of activities deviating from specific, well established regulatory requirments 2) Final determination of non-compliance with regulatory requirments are made by the agency Administrator 3) Final approval of means/methods for resolving non compliance with regulatory requirments are made by supervisor or agency management

4) Pursuit of enforcement actions against regulated entities is the decision of the agency Administrator
5) Routine and non-routine projects and work tasks are assigned by supervisor
6) Approval for training expenditures are made by agency management.

CHALLENGES

Describe the most typical and the most complex problems that are faced in this position.

Typical problems
Day to day challenges include but are not limited to: completing consistent, periodic compliance assessments on regulated entities; resolve complaints or non comliant situations where regulated entities, business, and private citizens are unaware of , misunderstand, or ignore applicable environmental regulatory requirements.;obtaining correct, appropriate information in submitted compliance related reports so that regulatory compliance may be assessed; staying current with, obtaining professional training in, and assessing compliance with new, changing, and more complex environemntal regulations;and use of database to assist in assuring compliance with a wide variety of requirements.Review of complex engineering designs.

Most complex challenge(s)
Implementing standards and regulations when users willfully refuse to follow guidance.

EDUCATION, CERTIFICATION AND LICENSING

Describe any formal education, licensure, registration, certificate, or professional affiliation **REQUIRED** to perform your job.

Basic Requirments
Degreee: A bachelor degree from an accredited college or university in natural science or engineering that included at least 30 semester hours in health physics, engineering, radiological science, chemistry, physics, biology, mathematics, and or calculus.

Work Experience: Two years of work experience in applied health physics.

OR

Education and Experience Substitution: 6-8 years of work experience or education in applied health physics with an aquired knowledge level equivalent to theat of a Radiological Engineering Manager. Typically two years of education is equivalent to 1 year of work experience.

KNOWLEDGE, SKILLS, ABILITIES AND COMPETENCIES

List the technical or specialized knowledge, skills, abilities and competencies required for effective functioning in this job.

Knowledge of the principles, theories, and practices of health physics/radiological protection sufficient to (1) perform technical review of health physics/radiological aspects of licensee actions and 2) develop regulatory criteria,guidance, and technical positions related to radiation protection /health physics

Demonstrated knowledge of NRC and Wyoming rules and regulations related to radiation protection aspects in the licensing and inspection of byproduct source mateiral

Knowledge of theory and application of radiation detetection devices. Understanding of detection limits and uncertainties in obtaining field data.

Demonstrate ability to manage all aspects of complex project development, cordination, review, scheduling etc

Ability to clearly communicate complex technical analyses, issues, and recommendations both orally and written.

Knowledge of analytical methods and techniques as applied to NRC and WYDEQ management

Ability to prioritize work quickly so that deadlines are met while maintaining quality

Abilty to train staff and manage different program areas.

SIGNATURE PAGE
Job Content Questionnaire

By signing this document, I am acknowledging that to the best of my knowledge, this is a true, accurate and complete description of my position.

Employee Signature — Date: 6/23/2017

Supervisor Signature — Date: 6/23/2017

Agency Human Resources Signature — Date: 6/26/17

State of Wyoming

Job Content Questionnaire

POSITION INFORMATION

Agency Number/Name: Department of Environmental Quality Position Number: 7005

Incumbent Name: Vacant (New position authorized by Legislature 3/26/2015)

Supervisor Name: Ryan Schierman Supervisor Position Number: 7001

TO BE FILLED OUT BY A&I HRD ONLY:

Class Code: ENGE10 Title: Project Geologist Effective Date: (m/d/yyyy)

PURPOSE

Write a brief statement describing the purpose of your job and how it achieves your department's objectives.

Under the direction of the Legislature and the Govenor the state of Wyoming is establishing a Nuclear Regulatory Program within the Department of Environmental Quality/ Land Quality Division, to assume primacy from the Federal Nuclear Regulatory Commission. The program's purpose is to protect the public, the worker, and the environment from the effects of ionizing radiation and other health concerns associated with uranium recovery while providing for the benificial use of such radioactive material. This position upholds the mission by technically evaluating the radiological hazards associated with new, operating , or standby uranium recovery operations. This includes reviewing technical submissions such as permit applications, license renewals, amendments, radiological surveys and reports, environmental impact statements, restoration activities, and decomissioning plans from a geological perspective. Additionally this position supports the licensee by developing and implementing regulatory guidance and standards and effectively communicating those to industry. Lastly this position interacts with the public by listening, educating, and informing the general public of the activites associated with uranium recovery.Develop regulations and guidance for the regulated community. Has limited decision authority within parameters defined by the uranium program manager. Assist regional office geologist and hydrogeologists in their workload of permit review for uranium recovery operations.

ESSENTIAL DUTIES

Please break the position into the major job functions or areas of responsibility.
List your major job duties in descending order of importance.
The total of % time should equal 100%.

Duty 1	% of time:
Using knowledge of geology and groundwater transport employee reviews technical submisssions such as permit applications, license renewals, amendments, radiological surveys, water quality data, environmental impact statements,restoration activities, and decommissioning plans. Compares submissions to rules, regulations, or standards and reports items to the program manager with recommendations for actions.Apply professional judgment (accepted geological knowledge and accepted geological practices) to evaluate industrial processes, facility operational data, technical performance, or other information and makes recommendations based on the results. Analyzes and comprehends operator generated data such as	40

(environmental monitoring data, water quality data, and exposure data) and using professional judgments ensure operators are in compliance.	

Duty 2	% of time:
Conducts routine and reactive inspection of uranium recovery licencees to determine compliance with rules, regulation and standards. Generates inspection reports based on information and provides these reports and recommendations to the program manager. Issue violations when noncompliance is identified and effectively communicate the justifications for notice of violation to the licensee. Be able to obtain and maintain training to becom a NRC recognized inspector of facilities and reviewer of licenses. Manage and mentor other geologist. Provide expertise for the department on matters of hydrogeology and geology.	25

Duty 3	% of time:
Reviews water quality data and using professionally judgment determine class of use. Able to provide technical judgment to Water Quality Division for concurance. Work with Water Quality in submittals to EPA for aquifer exemptions for both class 3 and class 1 wells. Review restoration data to determine if the restoration goals have been meet according to Wyoming statutes and NRC standards. In instances where restoration criteria are not met coordinates between regulatory community and industry on the development of alternative concentration limits	25

Duty 4	% of time:
Analyze and respond to public coments, observations, and complaints regarding licensed users. Provide comment, training, support , and corrective action when necessary.Represent the department to the public in a responsible manner that upholds the values and mission of the department. .	10

Duty 5	% of time:
	0

Duty 6	% of time:
	0

Duty 7	% of time:
	0

Duty 8	% of time:
	0

SUPERVISION

Do you have responsibility for hiring, performance appraisal, and disciplinary action?

☐ NO ☒ YES Total Number of Positions: 1

If yes, please list **(press CTRL + TAB to move across columns, press ENTER to add a new row).**

Position #	Class Code	Title	Incumbent Name
Yet to be classified			

WORK DIRECTION

Do you direct the work (e.g. train, assign, or review work) of employees and/or nonemployees (ie external contractors, inmates, etc) you do not formally supervise?

☐ NO ☒ YES Total Number of Positions: 1

If yes, please list **(press CTRL + TAB to move across columns, press ENTER to add a new row).**

Position #	Class Code	Title	Incumbent Name
Yet to be classified			

If this position manages or provides work direction to other employees, please select the best description(s) for the level of direction that is provided. Select all that apply.

☒ Distribute work to employees.
☒ Review other employees' work output.
☒ Train new employees.
☒ Work with employees on professional/personal development.
☐ Hire employees.
☒ Communicate disciplinary actions/issues to employees.
☐ Prepare and deliver performance management reviews to employees.
☐ Provide complete supervision (all of the above).

FINANCIAL RESPONSIBLITY

(select up to two)

☐ This position is responsible for setting and controlling a budget.
☐ This position has input into setting a budget.
☒ This position is responsible for staying within an assigned budget.
☐ This position does not have budget responsibility.

Amount

☐ up to $100,000
☐ $100,000 to $250,000
☐ $250,000 to $500,000
☒ $500,000 to $1,000,000
☐ $1,000,000 to $2,500,000
☐ $2,500,000 to $5,000,000
☐ $5,000,000 to $10,000,000
☐ $10,000,000 to $25,000,000
☐ $25,000,000 to $50,000,000
☐ $50,000,000 to $100,000,000
☐ $100,000,000 to $500,000,000
☐ $500,000,000 +

AUTHORITY

Please identify the types of decisions that this position has the power to make, as well as those that must be referred to a supervisor. In both cases include authority for decisions regarding issues of policy and procedure, administrative matters, personnel and budgetary responsibility.

What typical decisions does this position have **total authority for making?**
Employee in this position have defined decision making authority within bounds established by supervisor

1) Independent authority to conduct compliance inspections at regulated facilities.
2) Independent authority to work with regulated facilities to resolve non compliance issues within regulatory framework.
3) Independent authority to request revisions to reports submitted as part of routine regulatory requirments.
4) Independent authority to approve activities determined to be clearly compliant with well-established regulatory requirments.
5) Independent authority to communicate and colaborate with Water Quality
6) Independent authority to review and comment on items of geology and hydrogeology to the staff and the regulated community.

What typical decisions does this position **refer to others for approval**?
1) Approval of activities deviating from specific, well established regulatory requirments
2) Final determination of non-compliance with regulatory requirments are made by the agency Administrator

3) Final approval of means/methods for resolving non compliance with regulatory requirments are made by supervisor or agency management
4) Pursuit of enforcement actions against regulated entities is the decision of the agency Administrator
5) Routine and non-routine projects and work tasks are assigned by supervisor
6) Approval for training expenditures are made by agency management.

CHALLENGES

Describe the most typical and the most complex problems that are faced in this position.

Typical problems
Day to day challenges include but are not limited to: completing consistent, periodic compliance assessments on regulated entities; resolve complaints or non compliant situations where regulated entities, business, and private citizens are unaware of , misunderstand, or ignore applicable environmental regulatory requirements.;obtaining correct, appropriate information in submitted compliance related reports so that regulatory compliance may be assessed; staying current with, obtaining professional training in, and assessing compliance with new, changing, and more complex environmental regulations;and use of database to assist in assuring compliance with a wide variety of requirements.Review of complex engineering designs.

Most complex challenge(s)
Implementing standards and regulations when users willfully refuse to follow guidance.

EDUCATION, CERTIFICATION AND LICENSING

Describe any formal education, licensure, registration, certificate, or professional affiliation **REQUIRED** to perform your job.

Basic Requirements
Degreee: A bachelor degree from an accredited college or university in geology or hydrogeology

Certification:Successful candidate must have a professional certification as a professional geologist (PG)

Experience: Two years of work experience in geology/hydrogeology.

OR

Education and Experience Substitution: 6-8 years of work experience or education with an aquired knowledge level equivalent to that of a Project Geologist. Typically two years of education is equivalent to 1 year of work experience.

KNOWLEDGE, SKILLS, ABILITIES AND COMPETENCIES

List the technical or specialized knowledge, skills, abilities and competencies required for effective functioning in this job.

Knowledge of principles, theories, and practices of geology sufficient to (1) to perform technical review of licensee actions 2) develop regulatory criteria, guidance, and technical positions related to geology principles.

Knowledge of groundwater transport and the ability to evaluate water quality data to ensure compliance by operators.

Knowledge and familiarity with the Underground Injection Program (UIC) and EPA requirements under such program

Knowledge of Wyoming Department of Environmental Quality rules and regulations as it pertains to Uranium recovery and water quality.

Ability to evaluate data to determine if restoration objectives have been met, and a ability to work with regulatory bodies when restoration objectives cant be met.

Demonstrate ability to manage all aspects of complex project development, cordination, review, scheduling etc

Ability to clearly communicate complex technical analyses, issues, and recommendations both orally and written to staff and the regulated community.

Knowledge of analytical methods and techniques as applied to NRC and WYDEQ management

Understanding of groundwater mass transport modeling and geochemical modeling programs such as MT3D and PHREEQUC.

Ability to prioritize work quickly so that deadlines are met while maintaining quality

Abilty to train and manage staff

SIGNATURE PAGE
Job Content Questionnaire

By signing this document, I am acknowledging that to the best of my knowledge, this is a true, accurate and complete description of my position.

Vacant

Employee Signature

Date

Supervisor Signature

4/27/16

Date

Cynthia M. Hayden

Agency Human Resources Signature

4/27/16

Date

State of Wyoming

Job Content Questionnaire

POSITION INFORMATION

Agency Number/Name: Department of Environmental Quality Position Number: 7006

Incumbent Name: Vacant (New position authorized by Legislature 3/26/2105)

Supervisor Name: Ryan Schierman Supervisor Position Number: 7001

TO BE FILLED OUT BY A&I HRD ONLY:

Class Code: ENNR10 Title: NRC Program Principle Effective Date: (m/d/yyyy)

PURPOSE

Write a brief statement describing the purpose of your job and how it achieves your department's objectives.

Under the direction of the Legislature and the Govenor the state of Wyoming is establishing a Nuclear Regulatory Program within the Department of Environmental Quality/ Land Quality Division, to assume primacy from the Federal Nuclear Regulator Program. The program's purpose is to protect the public, the worker, and the environment from the effects of ionizing radiation and other health concerns associated with uranium recovery while providing for the benificial use of such radioactive material. This position upholds the mission by technically evaluating the radiological hazards associated with new, operating , or standby uranium recovery operations. This includes reviewing technical submissions such as permit applications, license renewals, amendments, radiological surveys and reports, environmental impact statements, and decomissioning plans. Additionally this position supports the licensee by developing and implementing regulatory guidance and standards and effectively communicating those to industry. Lastly this position interacts with the public by listening, educating, and informing the general public of the activites associated with uranium recovery.

ESSENTIAL DUTIES

Please break the position into the major job functions or areas of responsibility.
List your major job duties in descending order of importance.
The total of % time should equal 100%.

Duty 1	% of time:
Using knowledge of engineering, geology, or radiological principles employee reviews technical submisssions such as permit applications, license renewals, amendments, radiological surveys, environmental impact statements, and decomissioning plans. Compares submissions to rules, regulations, or standards and reports items to the program manager with recommendations for actions.Apply professional judgment (accepted radiological, geology, or engineering knowledge and accepted radiological, geology, or engineering practices) to evaluate industrial processes, facility operational data, technical performance, or other information and makes recommendations based on the results. Analyzes and comprehends operator generated data such as (environmental monitoring data and exposure data) and using professional judgments ensures operators are in compliance and are maintaining exposures as low as	40

reasonably achievable ALARA. Develop regulations and guidance for the regulated community. Has limited decision authority within parameters defined by the uranium program manager.	

Duty 2	% of time:
Conducts routine and reactive inspection of uranium recovery licencees to determine compliance with rules, regulation and standards. Generates inspection reports based on information and provides these reports and recommendations to the program manager. Issue violations when noncompliance is identified and effectively communicate the justifications for notice of violation to the licensee.	30

Duty 3	% of time:
Be able to obtain and maintain training to become a NRC recognized inspector of facilities and reviewer of licenses.Additionally this job requires continual advancment in understanding of engineering, geology and health physics principles.	20

Duty 4	% of time:
Analyze and respond to public coments, observations, and complaints regarding licensed users. Provide comment, training, support , and corrective action when necessary.Represent the Department to the public in a responsible manner that upholds the values and mission of the department.	10

Duty 5	% of time:
	0

Duty 6	% of time:
	0

Duty 7	% of time:
	0

Duty 8	% of time:
	0

SUPERVISION

Do you have responsibility for hiring, performance appraisal, and disciplinary action?

☐ NO ☒ YES Total Number of Positions: 1

If yes, please list **(press CTRL + TAB to move across columns, press ENTER to add a new row)**.

Position #	Class Code	Title	Incumbent Name
Yet to be classified			

WORK DIRECTION

Do you direct the work (e.g. train, assign, or review work) of employees and/or nonemployees (ie external contractors, inmates, etc) you do not formally supervise?

☐ NO ☒ YES Total Number of Positions: 1

If yes, please list **(press CTRL + TAB to move across columns, press ENTER to add a new row)**.

Position #	Class Code	Title	Incumbent Name

Yet to be classified

If this position manages or provides work direction to other employees, please select the best description(s) for the level of direction that is provided. Select all that apply.

- ☒ Distribute work to employees.
- ☒ Review other employees' work output.
- ☒ Train new employees.
- ☒ Work with employees on professional/personal development.
- ☐ Hire employees.
- ☒ Communicate disciplinary actions/issues to employees.
- ☐ Prepare and deliver performance management reviews to employees.
- ☐ Provide complete supervision (all of the above).

FINANCIAL RESPONSIBLITY

(select up to two)

- ☐ This position is responsible for setting and controlling a budget.
- ☐ This position has input into setting a budget.
- ☒ This position is responsible for staying within an assigned budget.
- ☐ This position does not have budget responsibility.

Amount

- ☐ up to $100,000
- ☐ $100,000 to $250,000
- ☐ $250,000 to $500,000
- ☒ $500,000 to $1,000,000
- ☐ $1,000,000 to $2,500,000
- ☐ $2,500,000 to $5,000,000
- ☐ $5,000,000 to $10,000,000
- ☐ $10,000,000 to $25,000,000
- ☐ $25,000,000 to $50,000,000
- ☐ $50,000,000 to $100,000,000
- ☐ $100,000,000 to $500,000,000
- ☐ $500,000,000 +

AUTHORITY

Please identify the types of decisions that this position has the power to make, as well as those that must be referred to a supervisor. In both cases include authority for decisions regarding issues of policy and procedure, administrative matters, personnel and budgetary responsibility.

What typical decisions does this position have **total authority for making?**
Employee in this position have defined decision making authority within bounds established by supervisor

1) Independent authority to conduct compliance inspections at regulated facilities.
2) Independent authority to work with regulated facilities to resolve non compliance issues within regulatory framework.
3) Independent authority to request revisions to reports submitted as part of routine regulatory requirments.
4) Independent authority to approve activities determined to be clearly compliant with well-established regulatory requirments.
5) Independent authority to review egineering design and construction plans

What typical decisions does this position **refer to others for approval**?
1) Approval of activities deviating from specific, well established regulatory requirements
2) Final determination of non-compliance with regulatory requirments are made by the agency Administrator
3) Final approval of means/methods for resolving non compliance with regulatory requirements are made by supervisor or agency management
4) Pursuit of enforcement actions against regulated entities is the decision of the agency Administrator
5) Routine and non-routine projects and work tasks are assigned by supervisor
6) Approval for training expenditures are made by agency management.

CHALLENGES

Describe the most typical and the most complex problems that are faced in this position.

Typical problems
Day to day challenges include but are not limited to: completing consistent, periodic compliance assessments on regulated entities; resolve complaints or non comliant situations where regulated entities, business, and private citizens are unaware of , misunderstand, or ignore applicable environmental regulatory requirements.;obtaining correct, appropriate information in submitted compliance related reports so that regulatory compliance may be assessed; staying current with, obtaining professional training in, and assessing compliance with new, changing, and more complex environemntal regulations;and use of database to assist in assuring compliance with a wide variety of requirements.Review of complex engineering designs.

Most complex challenge(s)
Implementing standards and regulations when users willfully refuse to follow guidance.

EDUCATION, CERTIFICATION AND LICENSING

Describe any formal education, licensure, registration, certificate, or professional affiliation **REQUIRED** to perform your job.

Basic Requirments
Degreee: A bachelor degree from an accredited college or university in natural science or engineering or related field that included at least 30 semester hours in health physics, engineering, radiological science, chemistry, physics, biology, mathematics, and or calculus.

OR

Education and Experience Substitution: 6-8 years of work experience or education in applied health physics or related subject with an aquired knowledge level equivalent to that of a Promgram Principal.

KNOWLEDGE, SKILLS, ABILITIES AND COMPETENCIES

List the technical or specialized knowledge, skills, abilities and competencies required for effective functioning in this job.

Knowledge of the radiological, engineering or health physics principles sufficient to (1) perform technical review of licensee actions and 2) develop regulatory criteria,guidance, and technical positions related to uranium recovery operations.

Demonstrated knowledge of NRC and Wyoming rules and regulations related to licensing and inspection of source material from recovery or milling and the mangangmet of byproduct material.

Demonstrate ability to manage all aspects of complex project development, cordination, review, scheduling etc

Ability to clearly communicate complex technical analyses, issues, and recommendations both orally and written.

Knowledge of analytical methods and techniques as applied to NRC and WYDEQ management

Ability to prioritize work quickly so that deadlines are met while maintaining quality

Abilty to train and manage staff

SIGNATURE PAGE
Job Content Questionnaire

By signing this document, I am acknowledging that to the best of my knowledge, this is a true, accurate and complete description of my position.

Vacant

Employee Signature

Date

Supervisor Signature

2-14-17

Date

Cynthia M. Hayden

Agency Human Resources Signature

2/15/17

Date

Appendix B to Subsection 4.6.2
Uranium Recovery Qualification Plan

Department of Environmental Quality

WYOMING

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY, LAND QUALITY DIVISION, URANIUM RECOVERY PROGRAM'S TRAINING POLICY STATEMENT

The Uranium Recovery Program (URP) will ensure that its staff will be qualified to perform all necessary licensing and inspection functions for the URP. The URP also recognizes the need for continued staff development through cross-work training and training required by staff to maintain current qualifications.

An individual will not be a lead inspector at a licensed facility unless the individual has demonstrated competency in the program training areas applicable. An individual will not be a senior license reviewer for a license unless the individual has demonstrated competency in the program training areas as applicable.

The program training areas and essential elements to be covered in each training area are described in URP's Training Qualification Form. When an individual has demonstrated competency in a particular training area to management, the training chart will be completed by that member of management.

Additional refresher training will be provided as necessary, as determined by the URP. This additional training recognizes that inspector and reviewer training does not stop with initial qualification, but that training should be made available for experienced inspectors and reviewers on the basis of need, special circumstances, and the necessity of keeping current with inspection and licensing programs.

_____ _____

Kyle Wendtland Date
Land Quality Division Administrator

4.6.2 Formal Qualification Plan

4.6.2.1 Qualification Plan, Uranium Recovery Inspector

The URP is dedicated to hiring qualified personnel. To demonstrate that URP positions are filled with qualified personnel, the URP will require the use of Qualification Journals. The URP's Qualification Journals will contain applicable requirements set forth in NRC Manual 1248, Appendix H and I.The Qualification Journal establishes the minimum training requirements for personnel assigned to perform safety inspection activities at uranium recovery facilities, and provides traceable demonstration that minimum requirements are met for each inspector.

The Qualification Journals consists of a series of qualification guides and signature cards for each URP inspector. Each signature card is used to document task completion, as indicated by the appropriate signature blocks. Each signature block card has a corresponding qualification guide which establishes the minimum knowledge levels or areas of study that must be completed for each signature card.

Most of the qualification guides are divided into sections. These sections reference the inspector's qualifications. The inspector is expected to have a general familiarity with these references. Other sections of the qualification guide identify specific references that have direct application to an inspection discipline. The inspector is expected to demonstrate a detailed knowledge of the specific references of the inspection discipline.

In order to support the review of upper tier documents, programs, and policies, the inspector's immediate supervisor will assign one or more uranium recovery facilities as reference facilities. The selection of a reference facility is intended to provide the inspector's management with the ability to tailor the qualification process to the experience and training level of the inspector, and to meet the inspection needs of the State of Wyoming. The use of specific real world material will reinforce the qualification process.

Wyoming Uranium Recovery Inspector Qualification Journal

To complete your qualifications as a Uranium Recovery Inspector you are required to complete the following ten (10) Signature Cards. All signoffs shall include the signature of either the State Training Coordinator or immediate supervisor and the date.

	Signature of Training Coordinator or immediate supervisor	Date
1) Background on Uranium Recovery	_____	_____
2) Code of Federal Regulations (C.F.R)	_____	_____
3) Wyoming State Statutes and Rules and Regulations	_____	_____
4) Federal and State Regulatory Guidance	_____	_____
5) NRC Inspection Manual	_____	_____
6) Industry Codes and Standards	_____	_____
7) Inspection Accompaniments	_____	_____
8) NRC Management Directives	_____	_____
9) Review of Significant Events at Uranium Recovery Facilities	_____	_____
10) Formal Training	_____	_____

Employee Name: _____

Qualification Card 1
Background on Uranium Recovery

A selection of articles explaining the uranium recovery process and overall use of uranium should be identified by the immediate supervisor. The review is to be performed by self-study, study-quizzes, briefings, or discussions. Documentation of the review is done through the use of Qualification Card 1. Comprehension is demonstrated and documented through the use of quizzes, briefings, reports, or discussions with either the State Training Coordinator or immediate supervisor signing off on comprehension. To the extent possible, recent application of various sections, new regulatory initiatives, and current industry issues should be emphasized.

Background of Uranium Recovery

	Employee Signature	Training Coord. or Immediate Supervisor Signature	Date
1) Reviewed Background Information On Uranium Recovery	_____	_____	_____

Employee Name: _____

Qualification Card 2
Code of Federal Regulations (C.F.R)

A selection of currently applicable C.F.R parts should be identified by the inspectors immediate supervisor and include the references listed below, along with other C.F.Rs deemed appropriate by the immediate supervisor. The review is to be performed by self-study, study-quizzes, briefings, or discussions. Documentation of the review is done through the use of Qualification Card 2. A general comprehension is demonstrated and documented through the use of quizzes, briefings, reports, or discussions with either the State Training Coordinator or immediate supervisor signing off on comprehension. To the extent possible, recent application of various sections, new regulatory initiatives, and current industry issues should be emphasized.

Code of Federal Regulations

	Employee Signature	Training Coord. or immediate supervisor Signature	Date
1) Familiarization and discussion regarding C.F.R. parts completed	_____	_____	_____

Employee Name: _____

Qualification Card 3
Wyoming State Statutes and Rules and Regulations

The Wyoming Department of Environmental Quality statutes, rules and regulations is an item of review dictated by the Immediate Supervisor who may prescribe the statutes, rules, and regulations that are pertinent to the specific job. The review is to be performed by self-study, study-quizzes, briefings, or discussions. Documentation of the review is done through the use of Qualification Card 3. Comprehension is demonstrated and documented through the use of quizzes, briefings, reports, or discussions with either the State Training Coordinator or Immediate Supervisor signing off on comprehension. To the extent possible, recent application of various sections, new regulatory initiatives, and current industry issues should be emphasized.

Wyoming State Statutes and Regulations

	Employee Signature	Training Coord. or Immediate Supervisor Signature	Date
1) Familiarization with Wyoming Department of Environmental Quality Statutes	_____	_____	_____
2) Familiarization with Wyoming Department of Environmental Quality Rules and Regulations	_____	_____	_____
3) Familiarization with Wyoming Uranium Recovery Program Procedures	_____	_____	_____

Employee Name: _____

Qualification Card 4
Federal and State Regulatory Guidance

A selection of currently applicable regulatory guidance should be identified by the Immediate Supervisor. The selection should include the references listed below, along with other regulatory guidance deemed appropriate by the Immediate Supervisor. The qualifying individual should be expected to have a general knowledge of the topics addressed in the references. The review is to be performed by self-study, study-quizzes, briefings, or discussions. Documentation of the review is done through the use of Qualification Card 4. Comprehension is demonstrated and documented through the use of quizzes, briefings, reports, or discussions with either the State Training Coordinator or Immediate Supervisor signing off on comprehension. To the extent possible, recent application of various sections, new regulatory initiatives, and current industry issues should be emphasized.

Federal and State Regulatory Guidance

	Employee Signature	Training Coord. or Immediate Supervisor Signature	Date
A. Selected regulatory guidance			
1) Regulatory Guidance	_____	_____	_____
2) Information Notices/ Bulletins	_____	_____	_____
3) NUREGs	_____	_____	_____
4) Generic Letters	_____	_____	_____
5) Federal Register Notices	_____	_____	_____
6) Policy and Guidance Directives	_____	_____	_____
7) NRC or State Technical Positions	_____	_____	_____
8) SECY Papers	_____	_____	_____

Employee Name: _____

Qualification Card 5
NRC and State Inspection Manuals/Procedures

A selection of currently applicable NRC Inspector Manual Chapters (MC) and Inspection Procedures (IP) referenced with direct application to Uranium Recovery inspection should be identified by the Immediate Supervisor. The application of the specific references to the inspection program should be studied in detail by the qualifying individual. Review of listed material will be documented by the employee's initials. Comprehension is demonstrated and documented through the use of quizzes, briefings, reports, or discussions with either the State Training Coordinator or Immediate Supervisor signing off on comprehension. To the extent possible, recent application of various sections, new regulatory initiatives, and current industry issues should be emphasized.

NRC Manual Chapters and Inspection Procedures

	Employee Signature	Training Coord. or Immediate Supervisor Signature	Date
1) Appropriate NRC and State Manual Chapters	_____	_____	_____

Employee Name: _____

Qualification Card 6
Industry Codes and Standards

A selection of currently applicable industry codes and standards should be identified by the Immediate Supervisor. The qualifying individual should be expected to have a general knowledge of the topics addressed in the reference, as well as OSHA training. The review is accomplished through OSHA classes, self-study, study quizzes, briefings, or discussions. Comprehension is demonstrated through the use of quizzes, discussion, or reports with either the State Training Coordinator or Immediate Supervisor signing off on comprehension.

	Employee Signature	Training Coord. or Immediate Supervisor Signature	Date
1) OSHA Training	_____	_____	_____
2) Industry Codes and Standards Morning Reports	_____	_____	_____

List of assigned industry standards:

_____
_____
_____
_____
_____
_____
_____
_____

Employee Name: _____

Qualification Card 7
Inspection Accompaniments

Each Inspector should accompany certified Inspectors on at least four (4) inspections. At least two (2) of these inspections should be performed at a facility other than the designated lead facility. The following is a guide for material that should be studied and discussed with the Inspector during the inspection.

Inspection Completed

1) _____	_____	_____	_____
Facility	Employee Signature	Certified Inspector's Signature	Date
2) _____	_____	_____	_____
Facility	Employee Signature	Certified Inspector's Signature	Date
3) _____	_____	_____	_____
Facility	Employee Signature	Certified Inspector's Signature	Date
4) _____	_____	_____	_____
Facility	Employee Signature	Certified Inspector's Signature	Date

Discussion of Inspection and Employee's Role

1) _____	_____	_____	_____
Facility	Employee Signature	Certified Inspector's Signature	Date
2) _____	_____	_____	_____
Facility	Employee Signature	Certified Inspector's Signature	Date
3) _____	_____	_____	_____
Facility	Employee Signature	Certified Inspector's Signature	Date
4) _____	_____	_____	_____
Facility	Employee Signature	Certified Inspector's Signature	Date

Employee Name: _____

Qualification Card 8
NRC Management Directives

A selection of currently applicable NRC Management Directives should be identified by the Immediate Supervisor. The qualifying Inspector should be expected to have a general knowledge of the topics addressed in the references. Review of listed material will be documented by the employee's initials. Comprehension is demonstrated and documented through the use of quizzes, briefings, reports, or discussions with either the State Training Coordinator or Immediate Supervisor signing off on comprehension.

NRC Management Directives

	Employee Signature	Training Coord. or Immediate Supervisor Signature	Date
1) Selected portions of the NRC Management Directives	_____	_____	_____

Employee Name:_____

Qualification Card 9
Review of Significant Uranium Recovery Events

A selection of significant historical events should be identified by the Immediate Supervisor. These events should be documented and studied in detail by the qualifying individual. The Immediate Supervisor should discuss the selected events in detail with the qualifying individual and go over recommendations made, lessons learned, and changes identified to prevent recurrence. The relevance of the event to the Uranium Recovery Program should be stressed. Immediate Supervisors will sign off when study has been sufficient.

Event Description	Employee Signature	Training Coord. or Immediate Supervisor Signature	Date
1) Selected significant historical events	_____	_____	_____

Employee Name:_____

Qualification Card 10
Formal Training

The training below is required for all uranium recovery inspectors in the State of Wyoming who are assigned to perform uranium recovery inspections at uranium recovery sites. Candidates possessing sufficient knowledge to meet minimum requirements, through education and prior experience, may be waived from any and all requirements. Requests for such exceptions must be made from the candidate's Immediate Supervisor by memorandum to Division management. Such requests should consider the candidate's ability to perform work activities without the benefit of the additional knowledge and regulatory perspective gained by completing the training requirements of the qualification journals.

Division management will approve, disapprove, or approve and disapprove (in part the immediate supervisor's exception request) and will inform the candidate, the candidate's First Line Supervisor, and State Training Coordinator. If the candidate is determined to be qualified, a qualification certificate should be signed by the Division Administrator, or the designee. The certificate will identify the effective date of the certification.

Staff qualified for one discipline, such as certified License Reviewer and Inspector, need not duplicate qualification requirements that are common for another discipline. Justification for accepting previous experience and training to meet program requirements must be documented in the candidate's training record.

Additionally, candidates wishing to substitute a formal training course for an equivalent required training course may do so with a formal request from the employee's Immediate Supervisor. When submitting the request, a course description is required to compare the substitute training course with the required formal training course. Training objectives are listed in the NRC Technical Training Division Course Catalog. If a course is deemed to be a worthy substitute, it will be documented in the employee's Qualification Card 10.

Comprehension of the material covered in the class will be documented either by a certificate obtained through the course, a report on the material, a quiz, or possibly a discussion. Ultimately, the signature of the State Training Coordinator or Immediate Supervisor documents competency.

Employee Name:_____

Qualification Card #10
(continued)

	Date of Training	Employee Initials	Training Coord. or Front Line Supervisor Signature	Date
A) Core Training				
1) Inspection Procedures Course (G-108)	_____	_____	_____	_____
2) Root Cause/Incident Investigation Workshop Course (G-205)	_____	_____	_____	_____
3) General Health Physics Recovery Course (F-104)	_____	_____	_____	_____
4) Fundamental Health Physics (H-122) or Fundamental Health Physics Self Study Course (H-122S)	_____	_____	_____	_____

Employee Name:_____

Qualification Card #10
(continued)

B) Specialized Training

Other specialized training/courses required for Inspectors performing inspection in specific areas:

Title of Course	Date of Training	Employee Initials	Training Coord. or Front Line Supervisor Signature	Date
1) _____	_____	_____	_____	_____
2) _____	_____	_____	_____	_____
3) _____	_____	_____	_____	_____
4) _____	_____	_____	_____	_____
5) _____	_____	_____	_____	_____
6) _____	_____	_____	_____	_____
7) _____	_____	_____	_____	_____
8) _____	_____	_____	_____	_____
9) _____	_____	_____	_____	_____

Employee Name:_____ Qualification Card #10 (continued)

C) Refresher Training

Qualified personnel are expected to maintain their qualification by completing the refresher training every three (3) years. In accordance with the NRC, refresher training will be conducted every three years following initial certification. In accordance with NRC Inspection Manual 1248-11, the requirements for receiving refresher training can be waived, under special circumstances, by Division management when it is concluded that the qualified individual does not require refresher training. Before taking refresher training, the qualified staff member should receive approval from his or her Immediate Supervisor to confirm that the training will be credited as refresher training. In making this decision, the Immediate Supervisor should take into consideration the objectives of the training and the qualified staff member's specific training needs.

	Title of Course	Course Number	Supervisor Initials	Training Coord. Signature	Date
1)	_____ _____	_____	_____ Supervisor	_____ Training Coordinator	_____
2)	_____ _____	_____	_____ Supervisor	_____ Training Coordinator	_____
3)	_____ _____	_____	_____ Supervisor	_____ Training Coordinator	_____
4)	_____ _____	_____	_____ Supervisor	_____ Training Coordinator	_____
5)	_____ _____	_____	_____ Supervisor	_____ Training Coordinator	_____

Qualification Guide 1

Background on Uranium Recovery

A. Background Information

1. The Immediate Supervisor, along with the Training Coordinator, will assign background information for the individual to review. The background information will cover uranium recovery techniques, current issues, and other basic information the managerial staff feels provides the groundwork for the understanding of regulations, regulatory guides, and other important information. The reviewer will demonstrate competency of the background information through tests and discussions with the Immediate Supervisor and the Training Coordinator.

Qualification Guide 2

Code of Federal Regulations (C.F.R)

A. A selection of currently applicable C.F.R Parts should be made by the Immediate Supervisor. The selection should include the references listed below and be documented. The qualifying individual should be expected to have a general knowledge of the topics addressed in the references. This review may be accomplished by self-study, study-quizzes, briefings, or discussions.

1.	10 C.F.R Part 19	Notices, instructions and reports to workers; inspections
2.	10 C.F.R Part 20	Standards for protection against radiation (includes selected Questions and Answers, Q & As)
3.	10 C.F.R Part 40	Domestic licensing of source material
4.	10 C.F.R Part 51	Environmental protection regulations for domestic licensing and related regulatory functions
5.	29 C.F.R Part 1910	General Industry Standards - Respiratory Protection (29 C.F.R Part 1910.134)
6.	30 C.F.R Part 828	Special Permanent Program Performance Standards - In-Situ Processing
7.	40 C.F.R Part 141	National Primary Drinking Water Regulations
8.	40 C.F.R Part 192	Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings

B. Following completion of the qualifying individual's self-study of the listed C.F.R Parts, a discussion will be held with the qualifying inspector by the Immediate Supervisor to test the qualifying individual's knowledge of these Parts. To the extent possible, recent application of various sections, new regulatory initiatives, and current industry issues should be emphasized.

Qualification Guide 3

Wyoming State Statutes and Rules and Regulations

In order for individuals to become qualified inspectors they must become familiar with applicable Wyoming State Statutes and Rules and Regulations.

A. Wyoming State Statutes

1. Wyoming Environmental Quality Act

   Article 4, Land Quality

   Article 20, Nuclear Regulatory Agreement

B. Wyoming Rules and Regulations

1. Uranium Recovery Program Rules
2. LQD Non Coal Rules

Qualification Guide 4

Regulatory Guidance

A. A selection of currently applicable regulatory guidance should be identified by the Immediate Supervisor. These references should include those listed below, and should be documented. The qualifying individual should be expected to have a general knowledge of the topics addressed in the references. The review may be accomplished by self-study, study-quizzes, briefings, or discussions. Note that many Regulatory Guides reference or endorse industry codes and standards listed in Qualification Guide 6, "Industry Codes and Standards". Study of corresponding and subtier codes and standards is recommended.

1. Regulatory Guides (use latest revision):

3.11	Design, Construction, and Inspection of Embankment Retention Systems at Uranium Recovery Facilities
3.46	Standard Format and Content of License Applications, Including Environmental Reports, for In Situ Uranium Solution Mining
3.51	Calculational Models for Estimating Radiation Doses to Man from Airborne Radioactive Materials Resulting from Uranium Milling Operations
3.56	General Guidance for Designing, Testing, Operating and Maintaining Emission Control Devices at Uranium Mills
3.59	Methods for Estimating Radioactive and Toxic Airborne Source Terms for Uranium Milling Operations
3.63	Onsite Meteorological Measurement Program for Uranium Recovery Facilities-Data Acquisition and Reporting
3.64	Calculation of Radon Flux Attenuation by Earthen Uranium Mill Tailings Covers
4.14	Radiological Effluent and Environmental Monitoring at Uranium Mills
4.15	Quality Assurance for Radiological Monitoring Programs (Inception through Normal Operations to License Termination) - Effluent Streams and the Environment
4.22	Decommissioning Planning During Operations
8.2	Administrative Practices in Radiation Surveys and Monitoring
8.7	Instructions for Recording and Reporting Occupational Radiation Exposure Data
8.9	Acceptable Concepts, Models, Equations, and Assumptions for a Bioassay Program

8.10	Operating Philosophy for Maintaining Occupational Radiation Exposures As Low As Is Reasonably Achievable
8.11	Applications of Bioassay for Uranium
8.13	Instruction Concerning Prenatal Radiation Exposure
8.15	Acceptable Programs for Respiratory Protection
8.22	Bioassay at Uranium Mills
8.25	Air Sampling in the Workplace
8.29	Instruction Concerning Risks from Occupational Radiation Exposure
8.30	Health Physics Surveys in Uranium Recovery Facilities
8.31	Information Relevant to Ensuring that Occupational Radiation Exposures at Uranium Recovery Facilities Will Be As Low As Is Reasonably Achievable
8.34	Monitoring Criteria and Methods to Calculate Occupational Radiation Doses
8.36	Radiation Dose to the Embryo/fetus
8.37	ALARA Levels for Effluents from Material Facilities

Others as selected by the Immediate Supervisor.

2. Information Notices (IN) and Bulletins (BL) and Regulatory Issue Summaries (RIS):

IN 93-60	Reporting Fuel Cycle and Materials Events to the NRC Operations Center, Supplement 1
IN 94-023	Guidance to Hazardous, Radioactive and Mixed Waste Generators on Elements of Waste Minimization
IN 95-055	Handling Uncontaminated Yellowcakes Outside of Facility Processing Circuit
IN 96-047	Record Keeping, Decommissioning Notifications for Disposals of Radwaste by Land Burial
IN 97-050	Contaminated Lead Products
IN 97-055	Calculation of Surface Activity for Contaminated Equipment & Materials
IN 97-057	Leak Testing of Packaging used in Transport of Radioactive Material
IN 97-058	Mechanical Integrity of In-Situ Leach Injection Wells & Piping
IN 99-003	Exothermic Reaction Involving Dried Uranium Oxide Powder (Yellowcake), Rev. 1

RIS 09-05	Uranium Recovery Policy Regarding (1) The Process for Scheduling Licensing Review of Applications for New Uranium Recovery Facilities and (2) The Restoration of Groundwater at Licensed Uranium In Situ Recovery Facilities
RIS 09-12	Uranium Recovery Policy Regarding Site Preparation Activities at Proposed, Unlicensed Uranium Recovery Facilities
RIS 09-14	Licensing Approach for Uranium In Situ Recovery Facility Applications
RIS 11-11	Regarding Long-Term Surveillance Charge for Conventional or Heap Leach Uranium Recovery Facilities Licensed Under 10 CFR Part 40
RIS 12-06	NRC Policy Regarding Submittal of Amendments for Processing of Equivalent Feed at Licensed Uranium Recovery Facilities
RIS 14-08	Regulatory Requirements for Transfer of Control (Change of Ownership) of Specific Material Licenses, Rev. 1
RIS 15-09	Decommissioning Timeliness Rule Implementation and Associated Regulatory Relief

Others as selected by the Immediate Supervisor.

3. NUREGs (latest revision, where applicable):

NUREG 0706	Final Generic Environmental Impact Statement on Uranium Milling
NUREG 1556, V. 15	Consolidated Guidance About Materials Licenses, Guidance About Changes of Control and About Bankruptcy Involving Byproduct, Source, or Special Nuclear Materials Licenses
NUREG 1569	Standard Review Plan for In Situ Leach Uranium Extraction License Applications
NUREG 1748	Environmental Review Guidance for Licensing Actions Associated with NMSS Programs
NUREG 1910	Generic Environmental Impact Statement for In-Situ Leach Milling Facilities
NUREG 2126	Standard Review Plan for Conventional Uranium Mill and Heap Leach Facilities, Draft Report for Comment
NUREG 2173	Tribal Protocol Manual
NUREG/CR-6733	A Baseline Risk-Informed, Performance-Based Approach for In Situ Leach Uranium Extraction Licensees

Others as selected by the Immediate Supervisor.

4. Generic Letters (GL):

97-03	Annual Financial Surety Update Requirements for Uranium Recovery Licensees
WDEQ/LQD Guideline No. 04	In-situ Mining (NonCoal)

Others as selected by the Immediate Supervisor.

5. Federal Register Notices:

60 FR 49296	Final Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments (September 22, 1995)

Others as selected by the Immediate Supervisor.

6. Policy and Guidance Directives (PGD/UR):

PGD 8-01	Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Byproduct, Source, or Special Nuclear Material Licensees, April 1993
UR 90-03	Memorandum of Understanding Between the U.S. Department of Energy and the NRC, November 1990
UR 91-01	Costs for Fencing Reclaimed Title II Sites, Letter from R.L. Bangart to A.B. Beach, February 1991
UR 91-02	Standard Format for Completion Review Report (CRR), LLUR, June 1991
UR 91-03	Position on Disposal Of In-Situ Wastes, LLWM, September 1991
UR 93-02	Standard Review Plan for the Review of Remedial Action of Inactive Mill Tailings Sites Under Title I of the Uranium Mill Tailings Radiation Control Act, Rev. 1, June 1993

Others as selected by the Immediate Supervisor.

7. Branch Technical Position:

Alternate Concentration Limits for Title II Uranium Mills (January 1996)

Design of Erosion Protection Covers for Stabilization of Uranium Mill Tailings Sites (August 1990)

Effluent Disposal at Licensed Uranium Recovery Facilities (April 1995)

Others as selected by the Immediate Supervisor.

8. SECY Papers:

97-110	Status Report on Implementation of Dam Safety Program (May 29, 1997)
95-155	Review of Previously Approved Reclamation Plans (June 14, 1995)
90-316	Decommissioning Records Plan, Records Management Guidelines (RMG)

Others as selected by the Immediate Supervisor.

Qualification Guide 5

NRC Inspection Manual Chapters (MC)

A. A selection of currently applicable NRC Manual Chapter (MC) and Inspection Procedure (IP) references with direct application to the Uranium Recovery inspection should be identified by the Immediate Supervisor. The application of the specific references to the inspection program should be studied in detail by the qualifying inspector. The State may substitute manual chapters equivalent to those of NRC for training.

1. REPORTS/COMMUNICATIONS/FOLLOW-UP

MC 0230	Morning Report
MC 0610	Inspection Reports
MC 0620	Inspection Documents and Records
MC 0720	NRC Bulletins and Information Notices
MC 0801	Inspector Feedback
MC 1120	Preliminary Notifications
IP 92701	Follow-up
IP 92703	Follow-up of Confirmatory Action Letters

2. INSPECTIONS

MC 0300	Announced and Unannounced Inspections
MC 1248	Qualification Programs For Federal and State Materials and Environmental Management Programs
MC 2620	On-Site Construction Reviews of Remedial Actions at Inactive Uranium Mill Tailings Sites (Title I UMTRCA)
MC 2641	In-Situ Leach Facilities Inspection Program
MC 2801	Uranium Mill and 11e.(2) Byproduct Material Disposal Site and Facility Inspection Program
IP 37001	10 C.F.R Part 50.59 Safety Evaluation Program
IP 87654	Uranium Mill Site Decommissioning
IP 88001	On-site Construction
IP 89001	In-Situ Leach (ISL) Facilities

3. INTERACTIONS WITH OTHER FEDERAL AGENCIES

MC 1007	Interfacing Activities between Regional Offices of NRC and OSHA

IP 87102 Maintaining Effluents from Materials Facilities As Low As Is Reasonably Achievable (ALARA)

4. RADIATION PROTECTION

MC 8300 Radiation Protection

IP 83726 Control of Radioactive Materials and Contamination, Surveys, and Monitoring

IP 83728 Maintaining Occupational Exposures ALARA

IP 83750 Occupational Radiation Exposure

IP 83822 Radiation Protection

5. TRANSPORTATION

MC 1330 Response to Transportation Accidents Involving Radioactive Materials

IP 86721 Transportation (Basic)

IP 86740 Inspection of Transportation Activities

IP 86750 Solid Radioactive Waste Management and Transportation of Radioactive Materials

6. OTHER

MC 1010 Independent Assessment and Analysis

MC 1100 Notification of Significant Meetings

MC 1201 Conduct of Employees

MC 2900 Performance Appraisal Program

7. URP Inspection Procedures

B. The Immediate Supervisor will hold discussions, interviews, or oral quizzes to test the qualifying individual's knowledge and understanding of the application of the selected references to the Uranium Recovery program.

Qualification Guide 6

Industry Codes and Standards

A. The qualifying individual is expected to complete a 10-hour OSHA training course, or receive equivalent or better training.

B. A selection of currently applicable industry codes and standards should be identified by the Immediate Supervisor. The qualifying individual should be expected to have a general knowledge of the topics addressed in the references. This review may be accomplished by self study, study quizzes, briefings, or discussions. Standards selected should be documented by the Immediate Supervisor. The Immediate Supervisor should test the qualifying individual's knowledge of application of these codes and standards to the Uranium Recovery program by discussions, interviews, or oral quizzes.

Qualification Guide 7

Inspection Accompaniments

A. Each inspector should accompany certified inspectors on at least four inspections. At least two of these inspections should be performed at a facility other than the designated lead facility.

B. The following is a guide for material that should be studied and discussed with the inspector in charge during these inspection accompaniments. The Immediate Supervisor will discuss these items, as appropriate, following each inspection accompaniment.

1. The Inspection Program
   - MC 2620 - On-site Construction Reviews of Remedial Actions at Inactive Uranium Mill Tailings Sites (Title 1 UMTRCA)
   - MC 2641 - In-Situ Leach Facilities Inspection Program
   - MC 2801 - Uranium Mill and 11e.(2) Byproduct Material Disposal Site and Facility Inspection Program

2. Scheduling and Preparation for Inspections
   - MC 0300 - Announced and Unannounced Inspections

3. Scope of Inspection

4. Entrance/Exit Interviews

5. Conduct of Inspection, Accumulation of Data

6. Post-inspection Activities for Inspectors
   - MC 0610 - Inspection Reports
   - MC 0620 - Inspection Documents and Records
   - Notification of Special Meetings

7. Morning Reports
   - MC 0230 - Morning Report

8. Non-Routine Licensee Events
   - MC 1110 - Potential Abnormal Occurrences
   - IP 90714 - Non-routine Reporting Program
   - Management Directive 8.3 - NRC Incident Investigation Program
   - Management Directive 8.9 - Accident Investigation

9. Preliminary Notification
   - MC 1120 – Preliminary Notifications

10. Bulletins/Information Notices
    - MC 0720- NRC Bulletins and Information Notices
    - MC 0730- Generic Communication Regarding Materials and Fuel Cycle

11. Use of Consultants of NRC
    - MC 1360- Use of Physician and Scientific Consultants in the Medical Consultant Program
    - Management Directive 10.6- Use of Consultants & Experts

12. Allegations and Investigations
    - Management Directive 8.8- Management of Allegations

13. Communication outside NRC
    - MC1007- Interfacing Activities Between Regional Offices of NRC and OSHA
    - Management Directive 5.5- Public Affairs Program
    - Management Directive 3.6- Distribution of Unclassified NRC Staff/Contractor-Generated Reports

Qualification Guide 8

NRC Management Directives

A. A selection of currently applicable NRC Management Directive (MD) references should be identified by the Immediate Supervisor. These references should include those listed below. The qualifying inspector should be expected to have a general knowledge of the topics addressed in the references. This review may be accomplished by self-study, study-quizzes, briefings, or discussions. The selection should include:

1. NRC MD 10.131 Protection of NRC Employees Against Ionizing Radiation
2. NRC MD 10.159 Differing Professional Views or Opinions
3. NRC MD 8.3 NRC Incident Investigation Program
4. NRC MD 8.8 Management of Allegations
5. NRC MD 4.6 License Fee Management Program
6. NRC MD 5.1 Intergovernmental Consultation
7. NRC MD 5.2 Memorandum of Understanding With States
8. NRC MD 5.5 Public Affairs Program
9. NRC MD 8.11 Review Process for 10 C.F.R Part 2.206 Petitions

B. Application of the selected NRC Management Directives to the Uranium Recovery program will be discussed with the qualifying individual by the Immediate Supervisor to test the qualifying individual's knowledge.

Qualification Guide 9

Review of Significant Uranium Recovery Events

A. A selection of significant historical related events should be identified by the Immediate Supervisor. These events should be documented and studied in detail by the qualifying individual.

B. The Immediate Supervisor should discuss the selected events in detail with the qualifying individual and go over recommendations made, lessons learned, and changes identified to prevent recurrence. The relevance of the event to the Uranium Recovery Program should be stressed.

Qualification Guide 10

Formal Training

The standards for each Training Course are provided in the NRC Technical Training Division Course Catalog and will not be duplicated in the Qualification Guide.

4.6.2.2 Qualification Plan, Uranium Recovery Project Manager/Technical Reviewer

Under the direction of the legislature and the Governor, the State of Wyoming is establishing a Uranium Recovery Program within the Department of Environmental Quality /Land Quality Division (DEQ) to assume regulatory authority from the Nuclear Regulatory Commission (NRC). To transition regulatory authority to the State of Wyoming, qualified individuals must be in place to bolster the program. The State Qualification Journals demonstrate that positions are filled with qualified personnel. The State Qualification Journals mirror applicable requirements set forth in NRC Manual 1248, Appendix I. The journal establishes the minimum training requirements for personnel assigned to perform project management and technical review of licensing actions for uranium recovery facilities, and provides traceable documentation that minimum requirements are met for each project manager/ technical reviewer.

The Qualification Journals consist of a series of qualification guides and signature cards. Each signature card is used to document task completion, as indicated by the appropriate signature blocks. Each signature block card has a corresponding qualification guide which establishes the minimum knowledge levels or areas of study that must be completed for each signature card.

Most of the qualification guides are divided into sections. The review of sections of the qualification guides identify references with general application to the project manager/technical reviewer qualifications. The project manager/technical reviewer is expected to have a general familiarity with these references. Other sections of the qualification guide identify specific references that have direct application to project management or technical review.

In order to support the review of upper tier documents, programs, and policies, the project manager's/technical reviewer's Immediate Supervisor will assign one or more uranium recovery facilities as reference facilities. The selection of a reference facility is intended to provide the management with the ability to tailor the qualification process to the experience and training level of the project manager/technical reviewer, and to meet the needs of the State of Wyoming. The use of specific real world material will reinforce the qualification process.

Wyoming Uranium Recovery Project Manager/Technical Reviewer Qualification Journal

To complete your qualifications as a Uranium Recovery Project Manager/Technical Reviewer you are required to complete the following eight (8) Signature Cards. All signoffs shall include the signature of either the State Training Coordinator or Immediate Supervisor and the date.

	Signature of State Training Coordinator or Immediate Supervisor	Date
1) Background on Uranium Recovery	_____	_____
2) Code of Federal Regulations (C.F.R)	_____	_____
3) Wyoming State Statutes and Rules and Regulations	_____	_____
4) Federal and State Regulatory Guidance	_____	_____
5) Inspection Accompaniments	_____	_____
6) NRC Management Directives	_____	_____
7) Review Selected Licensing Casework	_____	_____
8) Formal Training	_____	_____

Employee Name: _____

Qualification Card 1
Background on Uranium Recovery

A selection of articles explaining the uranium recovery process and overall use of uranium should be identified by the Immediate Supervisor. The review is to be performed by self-study, study-quizzes, briefings, or discussions. Documentation of review is done through the use of Qualification Card 1. Comprehension by the Project Manager/Technical Reviewer is demonstrated and documented through the use of quizzes, briefings, reports, or discussions with either the State Training Coordinator or Immediate Supervisor signing off on comprehension. To the extent possible, recent application of various sections, new regulatory initiatives, and current industry issues should be emphasized.

Background of Uranium Recovery

	Employee Signature	Training Coord. or Immediate Supervisor Signature	Date
1) Reviewed Background Information On Uranium Recovery	_____	_____	_____

Employee Name: _____

Qualification Card 2
Code of Federal Regulations (C.F.R)

A selection of currently applicable C.F.R parts should be identified by the Immediate Supervisor and include the references listed below, along with other C.F.Rs deemed appropriate by the Immediate Supervisor. The review is to be performed by self-study, study-quizzes, briefings, or discussions. Documentation of review is done through the use of Qualification Card 2. A general comprehension by the Project Manager/Technical Reviewer is demonstrated and documented through the use of quizzes, briefings, reports, or discussions with either the State Training Coordinator or Immediate Supervisor signing off on comprehension. To the extent possible, recent application of various sections, new regulatory initiatives, and current industry issues should be emphasized.

Code of Federal Regulations

	Employee Signature	Training Coord. or Immediate Supervisor Signature	Date
2) Familiarization and discussion regarding C.F.R. parts completed	_____	_____	_____

Employee Name: _____

Qualification Card 3
Wyoming State Statutes and Rules and Regulations

The Wyoming Department of Environmental Quality statutes, rules and regulations are items of review dictated by the Immediate Supervisor who may prescribe the statutes, rules, and regulations that are pertinent to the specific job. The review is to be performed by self-study, study-quizzes, briefings, or discussions. Documentation of review by the Project Manager/Technical Reviewer is done through the use of Qualification Card 3. Comprehension is demonstrated and documented through the use of quizzes, briefings, reports, or discussions with either the State Training Coordinator or Immediate Supervisor signing off on comprehension. To the extent possible, recent application of various sections, new regulatory initiatives, and current industry issues should be emphasized.

Wyoming State Statutes and Regulations

	Employee Signature	Training Coord. or Immediate Supervisor Signature	Date
1) Familiarization with Wyoming Department of Environmental Quality Statutes	_____	_____	_____
2) Familiarization with Wyoming Department of Environmental Quality Rules and Regulations	_____	_____	_____
3) Familiarization with Wyoming Uranium Recovery Program Procedures	_____	_____	_____

Employee Name: _____

Qualification Card 4
Federal and State Regulatory Guidance

A selection of currently applicable regulatory guidance should be identified by the Immediate Supervisor. The selection should include the references listed below, along with other regulatory guidance deemed appropriate by the Immediate Supervisor. The qualifying Project Manager/Technical Reviewer should be expected to have a general knowledge of the topics addressed in the references. The review is to be performed by self-study, study-quizzes, briefings, or discussions. Documentation of review is done through the use of Qualification Card 4. Comprehension is demonstrated and documented through the use of quizzes, briefings, reports, or discussions with either the State Training Coordinator or Immediate Supervisor signing off on comprehension. To the extent possible, recent application of various sections, new regulatory initiatives, and current industry issues should be emphasized.

Federal Regulatory Guidance

	Employee Signature	Training Coord. or Immediate Supervisor Signature	Date
A. Review and Discussion of Selected regulatory guidance			
1) Regulatory Guidance	_____	_____	_____
2) Information Notices/ Bulletins	_____	_____	_____
3) NUREGs	_____	_____	_____
4) Generic Letters	_____	_____	_____
5) Federal Register Notices	_____	_____	_____
6) Policy and Guidance Directives	_____	_____	_____
7) NRC or State Technical Positions	_____	_____	_____
8) SECY Papers	_____	_____	_____

Employee Name: _____

Qualification Card 5
Inspection Accompaniments/Site Familiarization

Each Project Manager/Technical Reviewer should accompany certified Inspectors on at least four (4) inspections. At least two (2) of these inspections should be performed at a facility other than the designated lead facility. The following is a guide for material that should be studied and discussed with the Inspector during the inspection.

Site Familiarization Completed

1) _____ Facility	_____ Employee Signature	_____ Certified Inspector's Signature	_____ Date
2) _____ Facility	_____ Employee Signature	_____ Certified Inspector's Signature	_____ Date
3) _____ Facility	_____ Employee Signature	_____ Certified Inspector's Signature	_____ Date
4) _____ Facility	_____ Employee Signature	_____ Certified Inspector's Signature	_____ Date

Discussion of Review and discussion of licensing site visits and their relation to the Project Manager/Technical Reviewer's role

1) _____ Facility	_____ Employee Signature	_____ Certified Inspector's Signature	_____ Date
2) _____ Facility	_____ Employee Signature	_____ Certified Inspector's Signature	_____ Date
3) _____ Facility	_____ Employee Signature	_____ Certified Inspector's Signature	_____ Date
4) _____ Facility	_____ Employee Signature	_____ Certified Inspector's Signature	_____ Date

Employee Name: _____

Qualification Card 6
NRC Management Directives

A selection of currently applicable NRC Management Directives should be identified by the Immediate Supervisor. The qualifying Project Manager/Technical Reviewer should be expected to have a general knowledge of the topics addressed in the references. Review of listed material will be documented by the employee's initials. Comprehension is demonstrated and documented through the use of quizzes, briefings, reports, or discussions with either the State Training Coordinator or Immediate Supervisor signing off on comprehension.

NRC Management Directives

	Employee Signature	Training Coord. or Immediate Supervisor Signature	Date
1) Selected portions of the NRC Management Directives	_____	_____	_____

Employee Name:_____

Qualification Card 7
Directed Review of Selected Uranium Recovery Licensing Casework

A selection of significant historical events should be identified by the Immediate Supervisor. These events should be documented and studied in detail by the qualifying Project Manager/Technical Reviewer. The Immediate Supervisor should discuss the selected events in detail with the qualifying individual and go over recommendations made, lessons learned, and changes identified to prevent recurrence. The relevance of the event to the Uranium Recovery Program should be stressed. Immediate Supervisors will sign off when study has been sufficient.

Event Description	Employee Signature	Training Coord. or Immediate Supervisor Signature	Date
1) Selected significant historical events	_____	_____	_____

Employee Name:_____

Qualification Card 8
Formal Training

The training below is required for all uranium recovery Project Manager/Technical Reviewers in the State of Wyoming who are assigned to perform uranium recovery inspections at uranium recovery sites. Candidates possessing sufficient knowledge to meet minimum requirements, through education and prior experience, may be waived from any and all requirements. Requests for such exceptions must be made from the candidate's Immediate Supervisor by memorandum to Division management. Such requests should consider the candidate's ability to perform work activities without the benefit of the additional knowledge and regulatory perspective gained by completing the training requirements of the qualification journals.

Division management will approve, disapprove, or approve and disapprove (in part the immediate supervisor's exception request) and will inform the candidate, the candidate's Fist Line Supervisor, and State Training Coordinator. If the candidate is determined to be qualified, a qualification certificate should be signed by the Division Administrator, or the designee. The certificate will identify the effective date of the certification.

Staff qualified for one discipline, such as certified License Reviewer and Inspector, need not duplicate qualification requirements that are common for another discipline. Justification for accepting previous experience and training to meet program requirements must be documented in the candidate's training record.

Additionally, candidates wishing to substitute a formal training course for an equivalent required training course may do so with a formal request from the employee's Immediate Supervisor. When submitting the request, a course description is required to compare the substitute training course with the required formal training course. Training objectives are listed in the NRC Technical Training Division Course Catalog. If a course is deemed to be a worthy substitute, it will be documented in the employee's Qualification Card 8.

Comprehension of the material covered in the class will be documented either by a certificate obtained through the course, a report on the material, a quiz, or possibly a discussion. Ultimately, the signature of the State Training Coordinator or Immediate Supervisor documents competency.

Employee Name:_____

Qualification Card #8
(continued)

	Date of Training	Employee Initials	Training Coord. or Supervisor Signature	Date
A) Core Training				
1) Licensing Practices and Procedures Course (G-109)	_____	_____	_____	_____
2) General Health Physics Recovery Course (F-104),	_____	_____	_____	_____
3) Root Cause Workshop (G-205)	_____	_____	_____	_____
4) Fundamental Health Physics (H-122) or Fundamental Health Physics Self Study Course (H-122S)	_____	_____	_____	_____

Employee Name:_____

Qualification Card #8
(continued)

B) Specialized Training

Other specialized training/courses required for Inspectors performing inspection in specific areas:

Title of Course	Date of Training	Employee Initials	Training Coord. or Front Line Supervisor Signature	Date
1) _____	_____	_____	_____	_____
2) _____	_____	_____	_____	_____
3) _____	_____	_____	_____	_____
4) _____	_____	_____	_____	_____
5) _____	_____	_____	_____	_____
6) _____	_____	_____	_____	_____
7) _____	_____	_____	_____	_____
8) _____	_____	_____	_____	_____
9) _____	_____	_____	_____	_____

Employee Name:_____

Qualification Card #8
(continued)

C) Refresher Training

Qualified Project Managers/Technical Reviewers are expected to maintain their qualification by completing the refresher training every three (3) years. In accordance with NRC, Refresher Training will be conducted every three years following initial certification. In accordance with NRC Inspection Manual 1248-11, the requirements for receiving refresher training can be waived, under special circumstances, by Division management when it is concluded that the qualified individual does not require refresher training. Before taking refresher training, the qualified staff member should receive approval from his or her Immediate Supervisor to confirm that the training will be credited as refresher training. In making this decision, the Immediate Supervisor should take into consideration the objectives of the training and the qualified staff member's specific training needs.

	Title of Course	Course Number	Supervisor Initials	Training Coord. Signature	Date
1)	_____	_____	_____	_____	_____
	_____		Supervisor	Training Coordinator	
2)	_____	_____	_____	_____	_____
	_____		Supervisor	Training Coordinator	
3)	_____	_____	_____	_____	_____
	_____		Supervisor	Training Coordinator	
4)	_____	_____	_____	_____	_____
	_____		Supervisor	Training Coordinator	
5)	_____	_____	_____	_____	_____
	_____		Supervisor	Training Coordinator	

Qualification Guide 1

Background on Uranium Recovery

A. Background Information

1. The Immediate Supervisor along with the Training Coordinator will assign background information for the Project Manager/Technical Reviewer to review. The background information will cover uranium recovery techniques, current issues, and other basic information the managerial staff feels provides the groundwork for the understanding of regulations, regulatory guides, and other important information. The reviewer will demonstrate competency of the background information through tests and discussions with the Immediate Supervisor and the Training Coordinator.

Qualification Guide 2

Code of Federal Regulations (C.F.R)

A. A selection of currently applicable C.F.R Parts should be made by the Immediate Supervisor. The selection should include the references listed below and be documented. The qualifying Project Manager/Technical Reviewer should be expected to have a general knowledge of the topics addressed in the references. This review may be accomplished by self-study, study-quizzes, briefings, or discussions.

1.	10 C.F.R Part 19	Notices, instructions and reports to workers; inspections
2.	10 C.F.R Part 20	Standards for protection against radiation (includes selected Questions and Answers, Q & As)
3.	10 C.F.R Part 40	Domestic licensing of source material
4.	10 C.F.R Part 51	Environmental protection regulations for domestic licensing and related regulatory functions
5.	29 C.F.R Part 1910	General Industry Standards - Respiratory Protection (29 C.F.R Part 1910.134)
6.	30 C.F.R Part 828	Special Permanent Program Performance Standards - In-Situ Processing
7.	40 C.F.R Part 141	National Primary Drinking Water Regulations
8.	40 C.F.R Part 192	Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings

B. Following completion of the qualifying individual's self-study of the listed C.F.R Parts, a discussion will be held with the qualifying Project Manager/Technical Reviewer by the Immediate Supervisor to test the qualifying individual's knowledge of these Parts. To the extent possible, recent application of various sections, new regulatory initiatives, and current industry issues should be emphasized.

Qualification Guide 3

Wyoming State Statutes and Rules and Regulations

In order for individuals to become a qualified Project Manager/Technical Reviewer, they must become familiar with applicable Wyoming State Statutes and Rules and Regulations.

A. Wyoming State Statutes

1. Wyoming Environmental Quality Act

   Article 4, Land Quality

   Article 20, Nuclear Regulatory Agreement

B. Wyoming Rules and Regulations

1. Uranium Recovery Program Rules
2. LQD Non Coal Rules

Qualification Guide 4

Regulatory Guidance

A. A selection of currently applicable regulatory guidance should be identified by the Immediate Supervisor. These references should include those listed below and should be documented. The qualifying Project Manager/Technical Reviewer should be expected to have a general knowledge of the topics addressed in the references. The review may be accomplished by self-study, study-quizzes, briefings, or discussions. Note that many Regulatory Guides reference or endorse industry codes and standards listed in Qualification Guide 6. Study of corresponding and subtier codes and standards is recommended.

1. Regulatory Guides (RG) (use latest revision)

   3.5 Standard Format and Content of License Applications for Uranium Mills

   3.8 Preparation of Environmental Reports for Uranium Mills

   3.11 Design. Construction, and Inspection of Embankment Retention Systems for Uranium Mills

   3.46 Standard Format and Content of License Applications, Including Environmental Reports, for In-Situ Uranium Solution Mining

   3.56 General Guidance for Designing, Testing Operating, and Maintaining Emission Control Devices at Uranium Mills

   3.59 Methods for Estimating Radioactive and Toxic Airborne Source Terms for Uranium Milling Operations.

   3.63 Onsite Meteorological Measurement Program for Uranium Recovery Facilities-Data Acquisition and Reporting

   4.15 Quality Assurance for Radiological Monitoring Programs (Normal Operations) - Effluent Streams and the Environment

   8.37 ALARA Levels for Effluents from Material Facilities

   Others as selected by the Immediate Supervisor.

2. Information Notices (IN) and Bulletins (BL)

   IN 93-60 Reporting Fuel Cycle and Materials Events to the NRC Operations Center, Supplement 1

   IN 94-023 Guidance to Hazardous, Radioactive and Mixed Waste Generators on Elements of Waste Minimization

   IN 95-055 Handling Uncontaminated Yellowcakes Outside of Facility Processing Circuit

   IN 96-047 Record Keeping, Decommissioning Notifications for Disposals of Radwaste by Land Burial

IN 97-050	Contaminated Lead Products
IN 97-055	Calculation of Surface Activity for Contaminated Equipment & Materials
IN 97-057	Leak Testing of Packaging used in Transport of Radioactive Material
IN 97-058	Mechanical Integrity of In-Situ Leach Injection Wells & Piping

Others as selected by the Immediate Supervisor.

3. NUREGs (latest revision, where applicable)

NUREG 1330	Manual for the Review of Financial Assurance Mechanisms for Decommissioning under 10 C.F.R Parts 30, 40, 70 and 72
NUREG 1569	Standard Review Plan (SRP) for In Situ Leach Uranium Extraction License Applications
NUREG 1621	Final SRP for the Review of Remedial Action of Inactive Mill Tailings Sites under Title I of the UMTRCA
NUREG 1910 Vol 1	Generic Environmental Impact Statement for In-Situ Leach Milling Facilities
NUREG/CR-4884	Interpretation of Bioassay Measurements
NUREG/CR-5849	Manual for Conducting Radiological Surveys in Support of License Termination
NUREG/CR-6232	Assessing the Environmental Availability of Uranium in Soils and Sediments

Others as selected by the Immediate Supervisor.

4. Generic Letters (GL)

97-03	Annual Financial Surety Update Requirements for Uranium Recovery Licensees
WDEQ/LQD	In-situ Mining (NonCoal) Guideline No. 04

Others as selected by the Immediate Supervisor.

5. Federal Register Notices

60 FR 39058	Minimization of contamination (July 21, 1997)
60 FR 49296	Final Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments (September 22, 1995)

Others as selected by the Immediate Supervisor.

6. Policy and Guidance Directives (PGD)

PGD 8-01	Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Byproduct, Source, and Special Nuclear Material Licensees, April 1993
UR 90-03	Memorandum of Understanding Between the U.S. Department of Energy and the NRC, November 1990
UR 91-01	Costs for Fencing Reclaimed Title II Sites, Letter from R.L. Bangart to A.B. Beach, February 1991
UR 91-02	Standard Format for Completion Review Report (CRR), LLUR, June 1991
UR 91-03	Position on Disposal Of In-Situ Wastes, LLWM, September 1991
UR 93-02	Standard Review Plan for the Review of Remedial Action of Inactive Mill Tailings Sites Under Title I of the Uranium Mill Tailings Radiation Control Act, Rev. 1, June 1993

Others as selected by the Immediate Supervisor.

7. Branch Technical Position

Alternate Concentration Limits for Title II Uranium Mills (January 1996)

Design of Erosion Protection Covers for Stabilization of Uranium Mill Tailings Sites (August 1990)

Effluent Disposal at Licensed Uranium Recovery Facilities (April 1995)

Others As selected by the Immediate Supervisor.

8. SECY Papers

97-110	Status Report on Implementation of Dam Safety Program (May 29, 1997)
95-155	Review of Previously Approved Reclamation Plans (June 14, 1995)
90-316	Decommissioning Records Plan, Records Management Guidelines (RMG)

Others as selected by the Immediate Supervisor.

Qualification Guide 5

Inspection Accompaniments/Site Familiarization Visits

A. Each Project Manager/Technical Reviewer should accompany certified inspectors on at least four inspections. At least two of these inspections should be performed at a facility other than the designated lead facility.

B. The following is a guide for material that should be studied and discussed with the inspector in charge during these inspection accompaniments. The Immediate Supervisor will discuss these items, as appropriate, following each inspection accompaniment.

1) The Inspection Program
   - MC 2620 - On-site Construction Reviews of Remedial Actions at Inactive Uranium Mill Tailings Sites (Title 1 UMTRCA)
   - MC 2641 - In-Situ Leach Facilities Inspection Program
   - MC 2801 - Uranium Mill and 11e.(2) Byproduct Material Disposal Site and Facility Inspection Program

2) Scheduling and Preparation for Inspections
   - MC 0300 - Announced and Unannounced Inspections

3) Scope of Inspection

4) Entrance/Exit Interviews

5) Conduct of Inspection, Accumulation of Data

6) Post-inspection Activities for Inspectors
   - MC 0610 - Inspection Reports
   - MC 0620 - Inspection Documents and Records
   - MC 1100 - Notification of Significant Meetings

7) Morning Reports
   - MC 0230 - Morning Report

8) Non-Routine Licensee Events
   - MC 1110 - Potential Abnormal Occurrences
   - IP 90714 - Non-routine Reporting Program
   - Management Directive 8.3 - NRC Incident Investigation Program
   - Management Directive 8.9 - Accident Investigation
   - Management Directive 8.10 - NRC Medical Event Assessment Program

9) Preliminary Notification

- MC 1120 - Preliminary Notifications

10) Bulletins/Information Notices
    - MC 0720 - NRC Bulletins and Information Notices
    - MC 0730 - Generic Communication Regarding Materials and Fuel Cycle

11) Use of Consultants of NRC
    - MC 1360 - Use of Physician and Scientific Consultants in the Medical Consultant Program
    - Management Directive 10.6 - Use of Consultants &Experts

12) Allegations and Investigations
    - Management Directive 8.8 - Management of Allegations

13) Communication outside NRC
    - MC1007 - Interfacing Activities Between Regional Offices of NRC and OSHA
    - Management Directive 5.5 - Public Affairs Program
    - Management Directive 3.6 - Distribution of Unclassified NRC Staff/Contractor-Generated Reports

Qualification Guide 6

NRC Management Directives

A. A selection of currently applicable NRC Management Directive (MD) references should be identified by the Immediate Supervisor. These references should include those listed below and be documented. The qualifying Project Manager/Technical Reviewer should be expected to have a general knowledge of the topics addressed in the references. This review may be accomplished by self-study, study-quizzes, briefings, or discussions. The selection should include:

1) NRC MD 10.131 Protection of NRC Employees Against Ionizing Radiation

2) NRC MD 10.159 Differing Professional Views or Opinions

3) NRC MD 8.3 NRC Incident Investigation Program

4) NRC MD 8.8 Management of Allegations

5) NRC MD 4.6 License Fee Management Program

6) NRC MD 5.1 Intergovernmental Consultation

7) NRC MD 5.2 Memorandum of Understanding With States

8) NRC MD 5.5 Public Affairs Program

9) NRC MD 8.11 Review Process for 10 C.F.R Part 2.206 Petitions

B. Application of the selected NRC Management Directives to the Uranium Recovery program will be discussed with the qualifying Project Manager/Technical Reviewer by the Immediate Supervisor to test the qualifying individual's knowledge.

Qualification Guide 7

Review of Selected Uranium Recovery Licensing Casework

A. A selection of licensing casework should be identified by the Immediate Supervisor. The relevance of the casework to the Uranium Recovery program should be documented and studied in detail by the qualifying Project Manager/Technical Reviewer.

B. The Immediate Supervisor should discuss the licensing casework in detail with the qualifying Project Manager/Technical Reviewer. The relevance of the casework to the Uranium Recovery Program should be stressed.

Qualification Guide 8

Formal Training

The standards for each Training Course are provided in the NRC Technical Training Division Course Catalog and will not be duplicated in the Qualification Guide.

Subsection 4.6.3

Qualifications of Current Technical Staff

TABLE OF CONTENTS

4.6.3 Qualifications of Current Technical Staff

The goal of the program is to have each of the current technical staff fully trained, using the criteria in Section 4.6.2, before the State assumes regulatory authority from the NRC. Each technical staff member will be trained as both a uranium recovery inspector and as a project manager/technical reviewer. The staff has already completed portions of the training, and are projected to complete all necessary training well before regulatory authority will be obtained. Technical staff hired in the future will also undergo this training.

Ryan Schierman, Project Manager

RYAN S. SCHIERMAN

200W 17th Street Cheyenne WY, 82002

EDUCATION

Idaho State University	Pocatello, ID	May 2013
M.S in Health Physics (NRC Fellow)		
Brigham Young University	Provo, UT	Dec 2010
B.S in Environmental Science		

EXPERIENCE

Wyoming DEQ Cheyenne, WY June 2015- Present
Uranium Recovery Program Manager

- Responsible for the establishment and management of the Uranium Recovery Program which includes a total of 6 personnel.
- Responsible for developing a Limited Agreement with the Nuclear Regulatory Commission (NRC) for the uranium recovery operations within the State; includes drafting rules and regulations, policies, and procedures.
- Responsible for developing a program that can evaluate technical submissions from the regulated community and ensure adequate protection of the public and the environment.
- Responsible for developing an inspection program that ensures compliance to State and Federal regulations.

Uranium One Casper, WY April 2014 – June 2015
Radiation Safety Officer

- Responsible for implementing the Radiation Safety Program; which included the Bioassay Program, Dosimetry Program, and Respiratory Program
- Responsible for compliance to NRC, DOT, and WDEQ requirements
- Evaluated ALARA principles and verified their implementation
- Managed the Radiation Department and the Environmental and Safety department for a total of five employees.

Uranerz Energy Cooperation Casper, WY June 2013-April 2014
Radiation Safety Officer

- Assisted in the development of the Radiation Safety Program, which included developing required NRC and USDOT training, the Bioassay Program, Quality Assurance Plan, writing standard operating procedures, and establishing routine inspection requirements.
- Used radiological computer code (RESRAD) to develop the radium benchmark standard for decommissioning and to establish administrative action levels for spill response.
- Utilized, operated, and maintained instrumentation necessary to meet regulatory requirements for contamination control.

Environmental Monitoring Laboratory Pocatello, ID Sept 2011- June 2013
Research Assistant

- Researched potential of honey as an environmental monitor of cesium deposition following Fukushima accident.
- Utilized, operated, and maintained 4 high purity germanium detectors, 2 gasp flow proportional counters, and 2 liquid scintillation detectors to analyze environmental samples.
- Assisted laboratory to meet QA/QC objective.
- Utilized LABSOCS© for analysis of honey, and other irregular shaped samples.

Denison Mines Blanding, UT Jan-July 2011 2011
Environmental Technician

- Project lead in instituting company safety practices, including radiological , during the sire groundwater nitrate plume exploration
- Assisted in regulatory compliance by sampling over 80 wells on site on a routine basis, and collecting other environmental samples such as surface water, vegetation, soil, and air.

UMETCO Minerals Corporation Gas Hills, WY April 2004-Aug 2005
Radiation Technician **(**summers)

- Assisted in implementation of the decommissioning plan by conducting gamma surveys of repository cover materials
- Collected and prepared soil samples for radium analysis
- Analyzed soil samples using gamma spectroscopy
- Performing necessary contamination surveys of equipment for release to the public.

Other

- Nuclear Regulatory Commission Fellowship 2010
- Health Physics Society member since 2010
- Conference of Radiation Control Program Directors (CRCPD) since 2016
- Organization of Agreement States (OAS) member since 2015
- Hazardous Waste Operations and Emergency Response (HAZWOPER) training 2010

Wyoming Uranium Recovery Program Training Qualification Form

Name: Ryan Schierman Date of Hire: 7/6/2015

Training Areas	Date Completed/ Projected Completion	Comments
Required Core Education/Training		
College/University Degree	12/2010	B.S., Environmental Science, Brigham Young University, Provo, UT
College/University Degree	04/2013	M.S, Health Physics, Idaho State University, Pocatello, ID
Background on Uranium Recovery	10/2018	Portions Completed
Federal and State Rules, Regulations and Guidance Documents	10/2018	Portions Completed
NRC and State Inspection Manuals/Procedures	10/2018	Portions Completed
Inspection Accompaniments	11/2016	4 accompaniments
Review of Significant Events at Uranium Recovery Facilities	10/2018	Portions Completed
Fundamental Health Physics (H-122)	N/A	* Took H-201
Root Cause Workshop (G-205)	03/2016	
Inspection Procedures (G-108)	10/2015	
Licensing Procedures (G-109)	04/2016	
Health Physics for Uranium Recovery (F-104/State Training)	10/2015	
Supplemental NRC Training		
Intermediate Health Physics (H-123)	N/A	*Took H-201
Advanced Health Physics (H-201)	08/2016	
MILDOS H-413	06/2016	
Environmental Monitoring (H-111)	05/2016	
Visual Sample Plan (H-500)	4/2017	
Environmental Risk Assessment (H-420)	5/2017	
Characterization and planning for Decommissioning (H-115)	11/2017	
RESRAD Overview	4/23/2018	Have not been accepted yet
MARSIMM (H-121S online)	7/2018	Have not been accepted yet
Other Relevant Training		
DOT Training, Dade Moeller Training Academy	08/2013	
Radiation Safety Officer, Dade Moeller Training Academy	08/2013	

David Adams, Health Physicist

DAVID ADAMS

200 W. 17th St. Cheyenne WY, 82002 | 307-777-7057 | david.adams@wyo.gov

EDUCATION

B.S., Environmental Health, Colorado State University, 2012
M.S., Radiological Health Sciences (Health Physics), Colorado State University, 2012

COURSEWORK AND SKILLS

Coursework

Principles of radiation biology, radiochemistry, radiological physics, dosimetry, nuclear instrumentation and measures, radioecology, aerosols, industrial hygiene, waste management, environmental monitoring statistics, calculus I & II, biostatistics, chemistry, organic chemistry, physics, biochemistry, microbiology, toxicology, environmental field methods

Skills & Certifications

MILDOS, RESRAD, MCNP, ArcMap, Global Mapper, Microsoft Office Suite, nuclear instrumentation, GPS instrumentation, radiation safety
40-hr OSHA HAZWOPER, Passed Part I of the CHP Exam, radiation safety training, Introduction to MCNPX and MCNP5, Practical MCNP for the Health Physicist, Radiological Engineer, & Medical Physicist

WORK HISTORY

September 2016 – Present

Health Physicist, State of Wyoming, Cheyenne, WY

Health Physicist for the Uranium Recovery Program (URP). Provides health physics support to the URP as required for regulating possible future licensees of the State of Wyoming Uranium Recovery Program.

October 2015 – September 2016

Health Physicist, Environmental Restoration Group, *Albuquerque, NM*

Responsible for data collection, interpretation, and report preparation of radiological data for various clients in the uranium industry and reclamation/remediation projects. Supported proposal preparation responding to RFP's. Field Manager of radiological environmental sampling and onsite laboratory operations utilizing in-situ and ex-situ XRF and gamma spectroscopy. Prepared reports for various clients responding to radiological and regulatory concerns and requests.

June 2012 – October 2015

Health Physicist, SENES Consultants/Arcadis US, *Highlands Ranch, CO*

Supported client requests for radiological expertise across multiple industries. Completed work plans, decommissioning plans, SOP's,

and reports for clients dealing with radioactive materials. Utilized programs such as MILDOS, MCNP, CAP-88, and RESRAD to support client requests with regards to public and occupational dose as well as radiological effects such as activation and Aeolian driven migration of radioactive materials. Collected field data and field samples in support of client reports. Utilized MARSSIM guidance to develop decommissioning plans and to complete final status surveys of a CERCLA site. Provided responses to RAI's from the NRC for multiple client's license applications in the uranium recovery industry.

April 2011 – October 2012

Radiation Support Staff, University of Colorado Hospital, *Aurora, CO*

Supported the radiation safety program at UCH to promote patient and worker radiation related safety and health. Prepared and read dosimeters for employees and patients exposed to radiation using the Landauer InLight OSL system.

June 2011 – August 2011

Health Physics Intern, Nuclear Energy Institute, *Washington, DC*

Created summaries of US Senate hearings and NRC meetings for review by senior regulatory specialists. Compared NRC directives related to site security for different types of licensees to current regulations. Prepared presentations on the Fukushima Dai-ichi nuclear accident for NEI's Radiation Protection Forum and prepared and updated environmental and occupational data for internal use by NEI.

Wyoming Uranium Recovery Program Training Qualification Form

Name: David W. Adams Date of Hire: 9/26/2016

Training Areas	Date Completed/ Projected Completion	Comments
Required Core Education/Training		
College/University Degree	05/2012	B.S., Environmental Health, Colorado State University, Fort Collins CO
College/University Degree	12/2012	M.S. Radiological Health Sciences, Colorado State University, Fort Collins, CO
Background on Uranium Recovery	10/2018	Portions complete
Federal and State Rules, Regulations and Guidance Documents	10/2018	Portions complete
NRC and State Inspection Manuals/Procedures	10/2018	Portions complete
Inspection Accompaniments	10/2018	Portions Completed
Review of Significant Events at Uranium Recovery Facilities	10/2018	Portions complete
Fundamental Health Physics (H-122)	N/A	M.S. In Health Physics, passed Part I of CHP Exam, will take Part II in 2017
Root Cause Workshop (G-205)	04/2017	
Inspection Procedures (G-108)	03/2017	
Licensing Procedures (G-109)	03/2017	
Health Physics for Uranium Recovery (F-104/State Training)	6/2017	
Supplemental NRC Training		
Internal Dosimetry (H-312)	12/2016	
Environmental Risk Assessment (H-420)	5/2017	
Characterization and Planning for Decommissioning (H-115)	11/2017	Accepted not completed
Visual Sampling Planning	11/2017	Accepted not completed
MARSSIM (H-121)	2/2018	Not accepted yet
RESRAD Overview (H-408)	4/2018	Not accepted yet
MILDOS Area Training Workshop	6/2018	Not accepted yet
MARSAME (H-120S)	7/2018	Offered online
Other Relevant Training		
40-hour HAZWOPER	03/2014	
8-hour HAZWOPER	04/2016	
Practical MCNP for the Health	01/2012	

Physicist, Radiological Engineer, & Medical Physicist		
Introduction to MCNP5 & MCNPX	06/2011	
Medical Laser Safety Course	10/2011	

Brandi O'Brien, Uranium Recovery Health Physicist

Brandi O'Brien

Uranium Recovery Program Engineer

200 W 17th Street ● Cheyenne, WY 82002 ● Phone: 307-777-6435 ● Brandi.OBrien@wyo.gov

Experience

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY, LAND QUALITY DIVISION, Cheyenne, WY

Uranium Recovery Program Engineer, 8/2015 to Present

Responsible for reviewing technical submissions such as permit applications, license renewals, amendments, radiological surveys, environmental impact statements, and decommissioning plans.

- Compare submissions to rules, regulations, or standards and report items to the program manager with recommendations for actions.
- Apply professional judgment to evaluate industrial processes, facility operational data, technical performance, or other information and make recommendations based on the results.
- Analyze and comprehend operator generated data and use professional judgement to ensure operators are in compliance and are maintaining exposures ALARA.
- Develop regulations and guidance.

Conduct routine and reactive inspections of uranium recovery licensees to determine compliance with rules, regulations and standards.

- Generate inspection reports based on information obtained and provide these reports and recommendations to the program manager.
- Issue violations when noncompliance is identified and effectively communicate the justification for notice of violation to the licensee.
- Set inspection schedules to oversee engineering and health physics staff.

Analyze and respond to public comments, observations and complaints regarding licensed users.

- Provide comment, training, support, and corrective action with necessary.
- Represent the Department to the public in a responsible manner that upholds the values and mission of the department.

Act as the Wyoming Uranium Workgroup chairman.

- Coordinate with uranium industry and Wyoming DEQ LQD staff members to facilitate discussions of regulations and issues within the industry.

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY, AIR QUALITY DIVISION, Cheyenne, WY

NSR Permitting Engineer, 4/2014 to Present

Responsible for preparing and reviewing complex air quality permits.

- Apply and interpret complex rules, regulations, guidelines, and standards and apply sound scientific principles to evaluate proposed emission controls, pollution minimization and monitoring techniques.
- Respond to comments and answer questions from industry, stakeholders, the public and internal staff related to policies, procedures and regulation.
- Review the work of others and help train and mentor new staff.

Aid other groups within Air Quality by providing input regarding oil and gas decisions related to compliance and rule making.

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY, AIR QUALITY DIVISION, Pinedale, WY

Air Quality Engineer, 9/2013 to 4/2014

- Responsible for inspecting natural gas facilities in the Jonah natural gas field.
  - Well site inspections of processing equipment using infrared FLIR camera.
  - Periodic inspection of larger facilities including compressor stations and liquids processing and gathering facilities.

Operator for air monitoring stations located in Daniel and Big Piney Wyoming. Aided with operations at the Boulder monitoring station.

- Ensure operation of equipment at the Daniel and Big Piney stations including ozone and NOx analyzers, particulate matter measurement devices, and methane/non-methane analyzers.
- Aid in sample collection at the Boulder station.

Responsible for reviewing project proposals for the Jonah Interagency Office.

- Managed and air quality project to provide funds to local residents wishing to replace older non-EPA certified wood stoves with newer, clean burning stoves.

Responsible for training and mentoring new employee.

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY, AIR QUALITY DIVISION, Pinedale, WY

Air Quality Engineer, 12/2010 to 9/2013

Responsible for inspecting natural gas facilities in the Pinedale Anticline natural gas field.

- Well site inspections of processing equipment using infrared FLIR camera.
- Periodic inspection of larger facilities including compressor stations and liquids processing and gathering facilities.

Operator for air monitoring stations located in Daniel and Big Piney Wyoming. Aided with operations at the Boulder monitoring station.

- Ensure operation of equipment at the Daniel and Big Piney stations including ozone and NOx analyzers, particulate matter measurement devices, and methane/non-methane analyzers.
- Aid in sample collection at the Boulder station.

ENVIRONMENTAL MONITORING LABORATORY, IDAHO STATE UNIVERSITY, Pocatello, ID

Laboratory Technician, 05/2008 to 05/2009

Responsible for preparing and testing air, water and soil samples for radioactive contamination using various methods and equipment, and trained summer interns and new employees on equipment and procedures.

IDAHO NATIONAL LABORATORY, Idaho Falls, ID

Fellowship Student, 2005 to 2008

Aided in research project to develop uranium nitride fuel with a cyro-process technique.

Developed aqueous particle suspensions, optimized carbon suspension, and aided in developing a freeze-dry process for microsphere formation to create material feedstock for the nitride conversion process.

Presentation of research data at technical forums (2005, 2006, 2007), 2007 American Nuclear Society Conference, and 2007 Space Nuclear Conference.

Education

UNIVERSITY OF WYOMING, Laramie, WY

Masters Student in Mechanical Engineering, 08/2009 – 12/2010

Did not obtain master's degree. Instead pursued work with Wyoming DEQ.

IDAHO STATE UNIVERSITY, Pocatello, ID

B.S. Nuclear Engineering, graduated 06/2009

Training

EPA Air Pollution Control Orientation Course , 02/2011
Cal/EPA Fundamental Inspector Course, 03/2011
EPA Introduction to Air Pollution Control, 04/2011
EPA Air Pollution source Inspection Safety, 04/2011
University of Texas, PETEX, Production Technology-Surface Equipment, 06/2011
Certified Optical Gas Imaging Thermographer , 06/2011
WESTAR Combustion Evaluation, 07/2011
EPA Introduction to Air Pollution Toxicology, 12/2011
WESTAR Fugitive VOC Inspection, 06/2012
WESTAR Landfill Gas Control Facilities, 06/2012
WESTAR Observing Source Tests, 06/2012
WESTAR Solvent & Degreasing Operations, 06/2012
NWETC When the Heat is On: Persuasive Speaking on Environmental Risk, Controversies, and High-Stakes Topics, RCOM-452, 06/2015
BR&E ProMax Training, Level 1 – Air Emissions, 06/2015
NRC F-104 Health Physics for Uranium Recovery, 08/2015
Wyoming Attorney General's Office NOV Drafting Training, 01/2016
NRC G-205 Root Cause Workshop, 03/2016
NRC H-122 Fundamental Health Physics, 06/2016
NRC H-119 Air Sampling for Radioactive Materials, 05/2016

Skills

Strong nuclear background and familiarity with methods to measure radioactive contamination
Knowledgeable of natural gas production equipment and emissions associated with them, as well as Wyoming Air Quality standards and regulations.
Skilled technical writer and speaker.
Experienced working in laboratory and monitoring stations associated with environmental air quality.
Skilled with the infrared FLIR camera to detect emissions from processing equipment.
Experienced with problem solving with the public and industry.
Experienced drafting and reviewing rules, regulations and policy documents.

Wyoming Uranium Recovery Program Training Qualification Form

Name: Brandi O'Brien Date of Hire: 8/21/2015

Training Areas	Date Completed/ Projected Completion	Comments
Required Core Education/Training		
College/University Degree	06/2009	B.S., Nuclear Engineering, Idaho State University, Pocatello, ID
Background on Uranium Recovery	3rd Qtr 2017	Portions complete
Federal and State Rules, Regulations and Guidance Documents	3rd Qtr 2017	Portions complete
NRC and State Inspection Manuals/Procedures	3rd Qtr 2017	Portions complete
Inspection Accompaniments	3rd Qtr 2017	3 complete as of 9/20/2016
Review of Significant Events at Uranium Recovery Facilities	3rd Qtr 2017	Portions complete
Fundamental Health Physics (H-122)	06/2016	
Root Cause Workshop (G-205)	03/2016	
Inspection Procedures (G-108)	10/2016	
Licensing Procedures (G-109)	11/2016	
Health Physics for Uranium Recovery (F-104/State Training)	08/2015	
Supplemental NRC Training		
Intermediate Health Physics (H-123)	02/2017	
Advanced Health Physics (H-201)	2018	Not yet accepted
Characterization and Planning for Decommissioning (H-115)	04/2017	
Air Sampling for Radioactive Materials (H-119)	05/2016	
Environmental Monitoring (H-111)	2018	Not yet accepted
Transportation of Radioactive Materials (H-308)	07/2017	Not yet accepted
Other Relevant Training		
NOV Drafting Training	01/2016	Wyoming Attorney General's Office
Wyoming Sage-Grouse Implementation Training	01/2016	Wyoming Attorney General's Office
ProMax Training Level-1 Air Emissions – 16 Hrs	06/2015	Bryan Reseach & Engineering, Inc.
Persuasive Speaking on Environmental Risk, Controversies, and High-Stakes Topics	06/2015	Northwest Environmental Training Center

Fugitive VOC Inspection (CARB 262)	07/2012	Western States Air Resources Council
Landfill Gas Control Facilities (CARB 285)	07/2012	Western States Air Resources Council
Observing Source Tests (CARB 224)	06/2012	Western States Air Resources Council
Solvent Cleaning and Degreasing Operations (CARB 233)	06/2012	Western States Air Resources Council
Introduction to Air Pollution Toxicology (SI 300)	12/2011	Environmental Protection Agency
Combustion Evaluation – APTI 427	08/2011	Western States Air Resources Council
Optical Gas Imaging Training	06/2011	Infrared Training Center
Introduction to Air Pollution Control	04/2011	Environmental Protection Agency
Air Pollution Source Inspection Safety (SI 446)	04/2011	Environmental Protection Agency
Fundamental Inspector Course (Course 300)	03/2011	Cal/EPA
Air Pollution Control Orientation Course	02/2011	Environmental Protection Agency

Alan Thompson, Project Geologist

Alan Thompson

Wyoming Department of Environmental Quality
Land Quality Division/Uranium Recovery Program
200 West 17th Street, Lower Level
Cheyenne, WY 82002
alan.thompson@wyo.gov
307-777-2979

PROFESSIONAL PROFILE

Service-driven geologist with extensive experience in oilfield wellsite geology and RCRA solid and hazardous waste rules and permitting, project management, and environmental site characterization. Detail-oriented, articulate, conscientious professional with regulatory experience, comfortable with communicating complex concepts to a broad range of clients and the public.

QUALIFICATIONS

Wyoming Registered Professional Geologist #3549
40-Hour OSHA HAZWOPER Certification

CORE ACCOMPLISHMENTS

Helped to secure over $200,000 in U.S. Environmental Protection Agency (EPA) brownfields grants and managed over $225,000 in contract funds for environmental cleanup of soils and groundwater at State Department of Environmental Quality/Voluntary Remediation Program (DEQ/VRP) sites. I previously managed over 40 landfill and VRP sites for the DEQ, and previously drilled/sat over 70 wells as a wellsite geologist/mudlogger/consultant in the Wyoming oil/gas industry.

Took the lead in updating the Wyoming Hazardous Waste Rules and Regulations (HWRR) in March 2015 after over 4 years of intensive work. The rules had not been updated by the State in seven years. In 2015 and 2016 I led the development of an EPA reauthorization package for the Hazardous Waste Permitting and Corrective Action Program (HWPCA) in the DEQ Solid and Hazardous Waste Division which was finalized in August 2016. The program had not been reauthorized by the EPA since 2002.

Honored with the Outstanding Public Servant Award for the DEQ Solid and Hazardous Waste Division in 2013.

RELEVANT EXPERIENCE

Project Geologist, 6/2016 to present
Natural Resources Analyst/Project Manager, 2008 to 6/2016
Wyoming Department of Environmental Quality (DEQ) — Cheyenne, WY

Presently serving as a Project Geologist within the Uranium Recovery Program in the Land Quality Division of DEQ. Currently working on completing training requirements for Nuclear Regulatory Commission (NRC) requirements to become a licensed reviewer and inspector. Also

working on a draft NRC agreement application for Wyoming to gain primacy relative to NRC.

I previously served as a Project Manager/Natural Resources Analyst in the Solid Waste Permitting and VRP/HWPCA. I was responsible for several hazardous waste sites which included a former refinery, an active RCRA refinery, a pipeline leak, an active gas plant, a trucking facility, a park in Cheyenne, a former grocery store, and other industrial facilities. I also conducted public meetings in conjunction with VRP volunteers and have regular interaction with the public and EPA. I also served as a Project Manager for landfill sites with the Solid Waste Program, and was responsible for permitting duties for over 40 landfill/solid waste sites.

I was the lead Project Manager for the Wyoming HWRR, and completed a State update to the HWRR utilizing Incorporation By Reference of the Federal 40 CFR, reducing the HWRR from 15 Chapters/1300+ pages to a single chapter of 45 pages. I also served as the HWPCA Division representative/volunteer for the Association of State and Territorial Solid Waste Management (ASTSWMO) Corrective Action and Permitting (CAP) Task Force within the Hazardous Waste Subcommittee.

I was also the main contact for sage grouse reporting in our Division at DEQ, and reported directly to the Game and Fish Dept. regarding those sites in the Division which were located within core areas.

Wellsite Geologist/Mudlogger, 2005 to 2008
Goolsby, Finley and Associates — Casper, WY

I was responsible for coal bed methane wellsite geology, conventional mudlogging, project mapping, cross-sections, evaluations/reports, and research for oil and gas projects in Cretaceous-Tertiary formations, primarily in Wyoming and Montana. Other experience included expert testimony on behalf of clients before the Wyoming Oil & Gas Conservation Commission, daily experience with Petra modeling software for mapping, prospect evaluation, and interpretation of subsurface data.

Consulting Geologist, 2001 to 2005
Casper and Laramie, WY

Subcontracted as a wellsite geologist/mudlogger for Geological Consulting, Inc. and Goolsby, Finley and Associates in the coal bed methane industry and Tertiary/Cretaceous oilfields of the Powder River Basin, Pinedale and Mesa Anticlines, and Washakie Basin. Supervised underreaming of coal seams, drillouts in Big George and associated coals of the Tertiary Fort Union Formation. During bust times in Casper I also worked as a field archaeologist doing surveys for the oilfield, and as an applications engineer for an industrial fabricator which served oilfield clients.

Regional/International Sales Manager, 1993 - 1998
In-Situ, Inc. - Laramie, WY

Coordinated direct sales, rentals, cold calls, and phone sales of water-level and water quality data loggers and probes for domestic United States and International sales territories. Traveled to U.S. regions, Europe, Malaysia, and Thailand to train representatives in environmental, wastewater, petrochemical, and industrial hygiene markets to promote hydrologic instruments in non-traditional markets. Conducted pump tests and slug tests as demonstrations of equipment. Total lifetime sales of $2.3 million.

Editor/Indexer, 1988-1989, Summer 1990
American Geological Institute - Alexandria, VA
Edited technical journal information and German technical abstracts and journals for data entry into the GeoRef geological database.

EDUCATION

Master of Science: Geology, 1991
New Mexico State University — Las Cruces, NM, USA

Bachelor of Science: Geology, 1987
Slippery Rock University of Pennsylvania — Slippery Rock, PA, USA

Indiana University Geological Field Station: Summer 1987
Indiana University, Bloomington, IN

AFFILIATIONS

Wyoming Geological Association (Member since 2002, Vice President 2008)

PUBLICATIONS

- Lawton, T.F., Mack, G.H., Sherry, C.R., Singleton, D.S., and Thompson, A.D., 1991, Subsidence history and sedimentology of the Orogrande Basin (abstract): Geological Society of America, Abstracts with Programs, 44th Annual Rocky Mountain Section, 20th Annual South-Central Section, Albuquerque, NM, April 22-24, 1991, v. 23, no. 4.
- Strecker, Uwe, Thompson, Alan D., and Christiansen, Glen E., 1993, Strata geometries in the Powder River Basin: Depositional, erosional, or combinations thereof? (Poster Session-Sequence Stratigraphy), American Association of Petroleum Geologists, Rocky Mountain Section, Spring Meeting.
- Thompson, Alan D., King, William E., Lawton, Timothy F., and Mack, Greg H., 1991, Fusulinid biostratigraphy of the Bar B Formation (Desmoinesian-Wolfcampian), southern Caballo Mountains, New Mexico (abstract): New Mexico Geological Society Proceedings Volume (Abstracts), Annual Spring Meeting, Socorro, New Mexico.
- Wroblewski, Anton F.-J., and Thompson, Alan D., 1998, Paleoenvironmental significance of continental ichnofossils in Paleocene foreland basin strata, southern Wyoming (abstract): Geological Society of America Annual Meeting (Abstracts), Toronto, Ontario.

RELEVANT PROFESSIONAL TRAINING

2017

- Health Physics for Uranium Recovery (NRC), F-104, Casper, WY
- Inspection Procedures (NRC), G-108, Chattanooga, TN
- Licensing Procedures (NRC), G-109, Chattanooga, TN
- Environmental Monitoring (NRC/ORAU), H-111, Oak Ridge, TN
- Characterization and Planning for Decommissioning (NRC), H-115, Bethesda, MD
- MARSIMM (NRC), H-121, Chattanooga, TN
- Transportation of Radioactive Materials (NRC), H-308, Chattanooga, TN

- Legal Issues 101, Wyoming Attorney General's Office, Cheyenne, WY
- HAZWOPER 8-Hour Refresher, National Environmental Trainers, Inc., online

2016

- Fundamentals of Health Physics (NRC), H-122/751, Chattanooga, TN
- Root Cause (NRC), G-205, Chattanooga, TN
- Notice of Violation Drafting Training, WY Attorney General's Office, Cheyenne, WY
- Sage Grouse Training/DDCT Tool, WY Game & Fish Department, Cheyenne, WY
- HAZWOPER 8-Hour Refresher, National Environmental Trainers, Inc., online
- State of Wyoming LMS online training: Harassment, Workplace Violence, Safe Winter Driving
- Wyoming Homeland Security and Highway Patrol: Active Shooter Training

2015

- Princeton Groundwater Pollution and Hydrology Course, Princeton Groundwater, Inc., Tampa, FL
- McCoy's RCRA Refresher (2-day course), McCoy and Associates, Lakewood, CO
- HollyFrontier Safety Training, Basic Orientation Plus and FSS Frontier Site-specific, Wyoming-Montana Safety Council, Cheyenne, WY
- Soil Sampling and Decision Making Using Incremental Sampling Methodology, ITRC, online
- Agency Rules Training, WY Attorney General's Office/SOS/LSO, Cheyenne, WY
- HAZWOPER 8-Hour Refresher, National Environmental Trainers, Inc., online

2014

- RCRA Hazardous Waste Regulations (5-day course), McCoy and Associates, Phoenix, AZ
- Wyoming Asbestos Rules and Regulations, DEQ/OSHA, Cheyenne, WY
- Environmental Sequence Stratigraphy(ESS): Technology for Addressing Complex Contaminated Groundwater Sites, U.S. EPA Groundwater Forum/AECOM, online
- Safety Training, Sinclair Wyoming Refining Co., Sinclair, WY
- Safety Training, Wyoming Refining Company, Newcastle, WY
- Agency Rules Training, WY Attorney General's Office/SOS/LSO, Cheyenne, WY
- HAZWOPER 8-Hour Refresher, National Environmental Trainers, Inc., online

2013

- Compounds of Emerging Concern in Groundwater, Groundwater Resources Association of California Webinar, online
- Agency Rules Training, WY Attorney General's Office/SOS/LSO, Cheyenne, WY
- HAZWOPER 8-Hour Refresher, National Environmental Trainers, Inc., online

2012

- Princeton Remediation Class, Princeton Groundwater, Inc., Las Vegas, NV
- LNAPL: Science, Management, and Technology, ITRC, Novi, MI
- HAZWOPER 8-Hour Refresher, National Environmental Trainers, Inc., online

2011

- Transport & Fate of Contaminants in Soil and Groundwater, National Environmental Mgt. Academy, LLC, Cheyenne, WY
- Vapor Intrusion Pathway: A Practical Guideline, ITRC, Denver, CO

- HAZWOPER 8-Hour Refresher, National Environmental Trainers, Inc., online

2010

- HAZWOPER 8-Hour Refresher, National Environmental Trainers, Inc., online

2009

- Dose Response Assessment Boot Camp, TERA, Cheyenne, WY
- Interstate Technology & Regulatory Council (ITRC) Vapor Intrusion Class, ITRC, Denver, CO
- HAZWOPER 8-Hour Refresher, National Environmental Trainers, Inc., online

2008

- OSHA 40-Hour HAZWOPER course, Laramie County Community College, Altitude Training Assoc., Cheyenne, WY
- Sanitary Landfill Design, University of Wisconsin Madison, Casper, WY
- Applied Groundwater Statistics, Sanitas Technologies, Sacramento, CA
- Defensive Driving for Government Employees, Wyoming Risk Management, online

Wyoming Uranium Recovery Program Training Qualification Form

Name: Alan Thompson Date of Hire: 6/15/2016

Training Areas	Date Completed/ Projected Completion	Comments
Required Core Education/Training		
College/University Degree	12/1987	B.S., Geology, Slippery Rock University, Slippery Rock, PA
College/University Degree	05/1991	M.S., Geology, New Mexico State University, Las Cruces, NM
Indiana University Geological Field Station	Summer 1987	Indiana University, Bloomington, IN
Background on Uranium Recovery	06/2016	06/2016
Federal and State Rules, Regulations and Guidance Documents	4th Qtr 2017	Portions complete
NRC and State Inspection Manuals/Procedures	4th Qtr 2017	
Inspection Accompaniments	1st Qtr 2017	4 complete as of 2/2/2017
Review of Significant Events at Uranium Recovery Facilities	4th Qtr 2017	
Fundamental Health Physics (H-122)(751) Blended Class	12/2016	Completed 12/2016
Root Cause Workshop (G-205)	10/2016	Completed 10/2016
Inspection Procedures (G-108)	03/2017	Completed 3/2017
Licensing Procedures (G-109)	03/2017	Completed 3/2017
Health Physics for Uranium Recovery (F-104/State Training)	06/2017	Completed 6/2017
Supplemental NRC Training		
MARSAME (H-120)	11/2017	Accepted
MARSIMM (H-121)	02/2017	Completed 2/2017
Intermediate Health Physics (H-123) Taken as (H-122)(751) Blended Class	12/2016	Completed 12/2016
Characterization and Planning for Decommissioning (H-115)	04/2017	Completed 4/2017
Air Sampling for Radioactive Materials (H-119)	05/2018	Applied, has yet to be accepted
Environmental Monitoring (H-111)	05/2017	Completed 5/2017
Transportation of Radioactive Materials (H-308)	07/2017	Completed 7/2017
MILDOS-Area Training Workshop (H-413)	06/2018	Applied, has yet to be accepted
Visual Sampling Plan (H-500)	11/2017	Accepted

Materials Control & Security Systems & Principles (S-201)	05/2018	Applied, has yet to be accepted
Other Relevant Training		
NOV Drafting Training	01/2016	Wyoming Attorney General's Office
Agency Rules Training	2013-2015	Wyoming Attorney General's Office
8-hour HAZWOPER Refresher classes	2009-2017	National Environmental Trainers, Inc.
Princeton Groundwater Pollution and Hydrology Course	2015	Princeton Groundwater, Inc.
McCoy's RCRA Refresher (2-day course)	2015	McCoy and Associates
RCRA Hazardous Waste Regulation (5-day course)	2014	McCoy and Associates
Princeton Remediation Class	2012	Princeton Groundwater, Inc.
Transport and Fate of Contaminants in Soil and Groundwater	2011	National Environmental Management Academy, LLC
Dose Response Assessment Boot Camp	2009	Toxicology Excellence for Risk Assessment (TERA)
Applied Groundwater Statistics	12/2008	Sanitas Technologies
40-Hour HAZWOPER	06/2008	Altitude Training Associates
Sanitary Landfill Design	2008	University of Wisconsin, Madison

Reid Brown, Hydrologist

Reid Brown
Hydrologist, State of Wyoming

200 W. 17th St. Cheyenne WY, 82002 ▪ (307) 777-7176 ▪ reid.brown@wyo.gov

Academics

- **Masters in Hydrology- New Mexico Institute of Mining and Technology** **Graduated 2017**
  - Thesis: Geomorphic and Biotic Controls on the Fate and Transport of Dust generated from Abandoned Mine Waste
    - I conducted an extensive soil survey of the mine site and the surrounding areas. Soil samples were collected from locations varying in both height and dominant vegetation type. Dust samples were collected every 2-3 months using BSNE dust traps. The data from the dust and soil were analyzed using linear and multiple linear regressions, principal component analysis and geospatial analysis to identify patterns in deposition and transport. In addition to depositional patterns, results have shown that there are significant differences between dust and soil as well as between dust collected at different heights off the ground.
  - Relevant Coursework
    - Uranium Geology, Hydrogeochemistry, Environmental Geochemistry of Mining Activities, Contaminant Hydrogeology, Reactive Transport Modeling, Reactive Transport Modeling II, Hydrological Theory and Field Methods, Flow and Transport in Hydrologic Systems, Data-Driven Modeling in Science and Engineering, Introduction to Geographic Information Systems, Quantitative Methods in Hydrology, Hydrogeology, Vadose Zone Processes, Water Resource Management, Hydrological Modeling, Fluvial Geomorphology, Atmospheric Dynamics and Rainfall Processes, Physics of Evaporation and Transpiration
- **Bachelor of Science in Ecology, University of Georgia** **Graduated 2009**
  - Undergraduate Thesis: Watershed land-use effects on carbon processing in streams
    - Designed and carried out an experiment testing organic matter breakdown rates in streams across an urbanization gradient as a metric for stream health.

Relevant Skills

- **Computer Software and Code**
  - ArcGIS, QGIS, ERDAS Imagine – used to create maps, manipulate satellite imagery, raster dataset manipulation and for geospatial data analysis for research.
  - R, R-Studio – used for Principal Component Analysis, statistical learning and prediction, linear and multiple linear regression and graphing for research.
  - PhreeqC, MODFLOW, Matlab – created solute and reactive transport models for coursework.
- **Field Experience**
  - Surveying, stream gauging, water level logging, soil and water collection, dust collection, sampling protocol design, weather station instillation, off-road driving
  - Equipment: ISCO 6700, 6712 and accessories, Marsh McBirney Flo-Mate 2000, Sontek FlowTracker ADV, water level loggers, Campbell Scientific data loggers, HOBO data loggers, Wind, Rain, Soil Moisture, Soil temperature, Relative Humidity, Barometric pressure and air temperature sensors, Gamma-ray Scintillometer

Work History

- **Natural Resource Program Principal – Wyoming Department of Environmental Quality** **Summer 2017 – Present**
  - Provide support to the Uranium Recovery Program by evaluating Hydrogeochemical models for wellfield decommissioning.
  - Provide analysis on wellfield packages submitted for new mine units.
  - Review additional technical documents as needed for the processing of new license applications and renewing existing licenses.
- **Research Assistantship - New Mexico Institute of Mining and Technology** **Fall 2014 – Spring 2017**
  - Research Projects:
    - Investigating the fate and transport of uranium bearing dust from an abandoned open pit mine. EPA 3052 soil digestion method with hydrofluoric acid is used to dissolve sediment. Soil metal concentrations are determined using an Agilent 7900 ICPMS.
    - Installation of magnetotelluric instrumentation for field survey to image hydrogeothermal resources and flow paths in Truth or Consequences, NM.
    - Used Landsat 8 and MODIS satellite images to calculate NDVI which was integral for estimation of statewide evapotranspiration to aid in efforts to create a statewide water budget. Evaluated evapotranspiration estimates from satellite imagery using large aperture scintillometers.
- **Teaching Assistant - Hydrological Theory and Field Methods** **Fall 2016**
  - Prepared activities and lecture for two lab sections for 15 upper level undergraduate and graduate students. The lecture and activities focused on key concepts in hydrology including: surveying and map reading methods, stream velocity and discharge measurements to develop stage-discharge relationships, evapotranspiration, flow in saturated and unsaturated porous media and solute transport.

- **Intern Mentor** **Summer 2015 & Summer 2016**
  - 2016 – Helped undergraduate interns design a project to determine the uranium concentration in stream sediments below the Jackpile Uranium Mine near Laguna and Isleta, NM.
  - 2015 – Helped undergraduate interns design a project to evaluate uranium concentrations in stream sediments below abandoned uranium mines on the Navajo Nation near Cove and Red Mesa, AZ.
- **Upper Oconee Watershed Network Board of Directors** **Spring 2011 – Summer 2014**
  - Elected board secretary January 2012 – May 2014
  - Elected Science and Monitoring committee chair April 2013 – May 2014
    - Responsible for organizing quarterly monitoring events, data entry and database maintenance.
- **SSA Contractor for Office of Research & Development, U.S. EPA** **Summer 2010 – Summer 2012**
  - Established and maintained two long-term field sites, collected baseline and storm flow water samples as well as bovine manure specimens.
    - Processed both water and manure samples for Total Coliforms and E. coli using Idexx Quanti-tray 2000 method.
    - Processed water samples for Total Suspended Solids using EPA method 160.2, EPA 160.1 for Total Dissolved Solids and for turbidity using the LaMotte 2020we colorimeter.
  - Experienced in using ISCO 6700 & 6712 automated water sample collectors.
    - Developed several collection programs for different types of sampling events.
    - Used both module 710 and 720 to trigger the ISCO and record change in depth over time.
  - Used both the Marsh McBirney Flo-Mate 2000 and The Sontek FlowTracker to measure discharge and develop stage-discharge rating curves for field sites.
  - Used rainfall simulators to generate runoff to estimate bacterial loading from experimental agriculture plots.
  - Responsible for entering and quality control of data for two projects.
    - Performed basic data analysis to look at trends in the data.
    - Used in house modeling software, Virtual Beach, to produce a two variable linear model to predict E. coli and enterococci concentrations in the two study streams.
  - Responsible for managing and ordering equipment and supplies.
- **Lab Technician III, Aquatic Biological & Environmental Lab, UGA** **Fall 2009 - Summer 2010**
  - Maintained fish cultures for trials to examine important factors in the transmission of induced mutations to offspring.
  - DNA extraction for gene sequencing.

Presentations & Publications

- Talk at Society for Mining, Metallurgy and Exploration 2017: Geochemistry and Transport of Uranium Bearing Dust
- Talk at Geological Society of America 2016: Geomorphic and Biotic Controls on the Transport of Uranium Bearing Dust
- Talk at New Mexico Geological Society 2016: Fate and Transport of Dust-Borne Uranium
- Poster at Animas Conference: Aeolian Transport of Dust-Borne Uranium
- Poster at GSA 2015: Aeolian Transport of Dust-Borne Uranium: Preliminary Findings
- Poster at the 59th Annual New Mexico Water Conference 2014: Test of the New LAS MkII Scintillometer for Validation of Statewide New Mexico Evapotranspiration Maps
- Poster at Association of Southeastern Biologists 2012: Water Quality Response to Changes in Agricultural Land Use Practices at Headwater Streams in Georgia
- Talk at the UGA Center for Undergraduate Research Opportunities Annual Research Symposium 2009: Watershed land-use effects on carbon processing in streams
- Manning, D.W., Brown, R., Bumpers, P.M., Giri, B., & McKay, S.K. "Long-Term Citizen-Led Monitoring Detects Biological Responses to an Acute Toxicity Event in Trail Creek, Athens Ga, USA." Proceedings of the 2015 Georgia Water Resources Conference, April 28-29, 2015, University of Georgia, Athens. http://gwri.gatech.edu/sites/default/files/files/docs/2015/3.1.3manning.pdf
- Oladeinde, A., Bohrmann, T., Wong, K., Purucker, S. T., Bradshaw, K., Brown, R., Snyder, B., & Molina, M. "Decay of fecal indicator bacterial populations and bovine-associated source-tracking markers in freshly deposited cow pats." Applied and environmental microbiology 80, no. 1 (2014): 110-118.

Funded Proposals

- Awarded NMGS Grant-in-Aid 2016: Local Sources and Sinks for Dust-Borne Uranium near a Former Open Pit Uranium Mine, Laguna Pueblo, NM
- Awarded NMGS Grant-in-Aid – 2015: Aeolian Transport of Dust-Borne Uranium Contamination
- Awarded a New Mexico Water Resources Research Institute Student Water Research Grant – 2014: Test of the New LAS MkII Scintillometer for Validation of Statewide New Mexico Evapotranspiration Maps

Awards & Activities

- Josh Laerm Memorial Outstanding Ecology Undergraduate Award (2009)
- Eagle Scout (2004)

Wyoming Uranium Recovery Program Training Qualification Form

Name: Reid Brown Date of Hire: 06/19/2017

Training Areas	Date Completed/ Projected Completion	Comments
Required Core Education/Training		
College/University Degree	05/2009	B.S. Ecology, University of Georgia, Athens, GA
College/University Degree	08/2017	M.S. Hydrology, New Mexico Institute of Mining and Technology, Socorro, NM
Background on Uranium Recovery	10/2018	Portions Completed
Federal and State Rules, Regulations and Guidance Documents	10/2018	Portions Completed
NRC and State Inspection Manuals/Procedures	10/2018	Portions Completed
Inspection Accompaniments	10/2018	1 Accompaniment completed
Review of Significant Events at Uranium Recovery Facilities	10/2018	Portions Completed
Fundamental Health Physics (H-122)	05/2018	* Took H-122s, applied for H-122 lab 5/21/2018
Root Cause Workshop (G-205)	TBD	*class date not listed for 2018
Inspection Procedures (G-108)	03/2018	Applied for G-108 for 03/05/2018
Licensing Procedures (G-109)	03/2018	Applied for G-109 for 03/12/2018
Health Physics for Uranium Recovery (F-104/State Training)	06/2017	completed
Supplemental NRC Training		
Intermediate Health Physics (H-123)		
Advanced Health Physics (H-201)		
MILDOS H-413		
Environmental Monitoring (H-111)	05/2018	Applied for H-111 05/07/2018
Visual Sample Plan (H-500)	11/2018	Accepted to H-500, 11/28/2018
Environmental Risk Assessment (H-		

420)		
Characterization and planning for Decommissioning (H-115)	11/2017	Accepted to H-115 class, 11/13/2018
RESRAD Overview		
MARSIMM (H-121S online)		
Transportation of Radioactive Materials (H-308)	09/2018	Applied for H-308 class 09/24/2018
Air Sampling for Radioactive Materials (H-119)	04/2018	Applied for H-119 04/2018
Other Relevant Training		
Introduction to PhreeqC	04/2018	
Advanced topics in PhreeqC	TBD	*Class is not guaranteed to happen but if it did it would likely be in 07/2018

Subsection 4.7

Event and Allegation Response Program Elements

Department of Environmental Quality

WYOMING

4.7.1 Procedures for Responding to Events and Allegations

The program must have written procedures for responding to materials events within the State. The response capability may be part of another organization, such as a response organization for fixed nuclear facilities. However, it is still part of the materials program under the Agreement. The program should also have written procedures for reporting events to NRC and to the Nuclear Materials Events Database (NMED).

The program should have written procedures for responding to allegations of violations of regulatory requirements. The program does not need to have criminal investigatory capability within the program or its parent agency. If it does not, then it should have procedures for contacting appropriate authorities when needed.

4.7.1.1 Information Needed

The State should submit its procedures for responding to events and allegations.

- The Uranium Recovery Program (URP) shall follow the procedures for responding to materials events and allegations provided in the URP's *Event and Allegation Response Procedural Manual*.

4.7.1.2 Evaluation Criteria

Event response procedures should be consistent with, but need not be identical to NRC procedures. The procedures should address the following:

a. Immediate response and actions to mitigate an event;

- The Uranium Recovery Program (URP) shall follow the procedures for responding to materials events provided in the URP's *Event and Allegation Response Procedural Manual* in Appendix A to Subsection 4.7 *Event and Allegation Response Procedural Manual* Section 2.0, Attachment D, the State of Wyoming Response Plan (October 2008), Nuclear/Radiological Incident Annex, and Attachment E, the WDEQ Emergency Response Plan (May 2016).

b. Follow-up inspections and enforcement actions;

- The Uranium Recovery Program (URP) shall follow the procedures for follow-up inspections and enforcement actions provided in the URP's *Event and Allegation Response Procedural Manual*, Appendix A to Subsection 4.7 *Event and Allegation Response Procedural Manual* Section 2.5, Section 2.6, and Appendix B to Subsection 4.7, *Event Reporting Procedural Manual*, Section 7.4.

c. Notifications to licensing staff;

- The Uranium Recovery Program (URP) shall follow the procedures for responding to materials events provided in the URP's *Event and Allegation Response Procedural Manual*, Appendix A to Subsection 4.7 *Event and Allegation Response Procedural Manual*, Section 2.1, Section 2.3, and Appendix B to Subsection 4.7, *Event Reporting Procedural Manual*,

Section 2.1, Section 6.0, Section 7.0, and Attachment A.

d. Reports to the incident file;

- The Uranium Recovery Program (URP) shall follow the procedures for responding to materials events and allegations provided in the URP's *Event and Allegation Response Procedural Manual*, Appendix B to Subsection 4.7, *Event Reporting Procedural Manual*, Attachment A.

e. Notifications to other affected licensees of generic problems.

- The Uranium Recovery Program (URP) shall follow the procedures for responding to materials events and allegations provided in the URP's *Event and Allegation Response Procedural Manual,* Appendix B to Subsection 4.7, *Event Reporting Procedural Manual*, Section 1.1.

Allegation procedures should address response, follow-up and closeout. They should also provide for protection of the identity of a person making an allegation when requested. The procedures should also provide for the protection of other sensitive information.

- The Uranium Recovery Program (URP) shall follow the procedures for responding to allegations provided in the URP's *Event and Allegation Response Procedural Manual,* Appendix A to Subsection 4.7 *Event and Allegation Response Procedural Manual*, Section 3.0, Overview of URP Allegation Procedures.

Appendix A to Subsection 4.7
Event and Allegation
Response Procedural Manual
Uranium Recovery Program

Department of Environmental Quality

WYOMING

Event and Allegation Response Procedural Manual

Uranium Recovery Program

Department of Environmental Quality

WYOMING

August 2017

Table of Contents

1.0 Introduction

The Wyoming Uranium Recovery Program (URP) has developed procedures in this manual for responding to radiological materials events, and allegations of statutory and regulatory violations.

The procedures included in this manual are based upon the following NRC and State of Wyoming references and resources:

1. NRC Criteria Policy Statement, Criteria 1 and 11;
2. NRC Management Directive 5.6, *Integrated Materials Performance Evaluation Program (IMPEP)*;
3. NRC Management Directive 8.8, *Management of Allegations*;
4. NRC Inspection Manual Chapters 1301 through 1303, and 1330;
5. NMSS Procedure SA-105, *Reviewing Common Performance Indicator #5, Response to Incidents and Allegations*;
6. NMSS Procedure SA-300, *Reporting Material Events*;
7. NMSS Procedure SA-400, *Management of Allegations*;
8. State of Wyoming, *Wyoming Response Plan, Nuclear/Radiological Incident Annex*, October 6, 2008, see Attachment D; and
9. State of Wyoming, Department of Environmental Quality, *Emergency Response Plan*, May 2016, see Attachment E.

Written procedures for reporting radiological material events to the NRC NMED database are provided separately in URP's *Event Reporting Procedural Manual*, Subsection 4.7, Appendix B, dated August 2017.

2.0 Overview of URP Event Response Procedures

This section provides general information related to event/incident response within the URP.

2.1 Introduction to Incident/Event Response Procedures

URP staff should use this section as guidance when responding to radiological source material or byproduct material incidents that do not require activation of the NRC Incident Response Program (NRC Management Directive, MD 8.2). If upon receipt of the material incident report the URP determines that the incident is a major emergency, the URP will notify the State and Federal entities listed in Section 4. Radiological material incidents should be reported to the URP via phone, fax, or electronically as described in Section 4 of this manual. The URP should record the incident on the incident form provided in Attachment A, and report the incident to the NRC via the procedures detailed in the URP *Event Reporting Procedural Manual* dated August 2017. Allegation response is covered in Section 3 of this manual. Allegations should be recorded on the allegation form provided in Attachment B of this manual.

2.2 Coordination with Federal Agencies Upon the Discovery of Radioactive Material in Unrestricted Areas

If the incident involves the discovery of radioactive material in an unrestricted area and the material is known to be licensed (not just licensable) by NRC or an Agreement State under the Atomic Energy Act, then NRC is the Lead Federal Agency (LFA) for the Federal response, under the Federal Radiological Emergency Response Plan (FRERP). If the incident involves

radioactive material owned by or for the U.S. Department of Defense (DOD) or the U.S. Department of Energy (DOE), then DOD or DOE is the LFA for the Federal response. If the incident involves radioactive material of other origin (foreign, naturally occurring, accelerator-produced, or unknown licensee), then the U.S. Environmental Protection Agency (EPA) is the LFA for the Federal response. Under the FRERP, the U.S. Department of Justice (DOJ) is the LFA for coordinating the Federal response to acts of terrorism in the United States and its territories. The Federal Bureau of Investigation (FBI) will manage the law enforcement aspect of the Federal response to such incidents. The FBI also is responsible for investigating all alleged or suspected criminal violations of the Atomic Energy Act of 1954, as amended, and Title 18 of the Code of Federal Regulations. The URP will provide follow-up actions for incidents at byproduct and source material operations licensed in Wyoming by the URP.

2.3 Follow-up Actions for Notifications

(a) The URP will obtain details surrounding the incident and record the details on the incident form provided in Attachment A so as to be able to decide what action to take, and who has lead responsibility at the State and Federal levels.

(b) In cases involving intakes of radioactive materials that are reportable under 10 C.F.R Part 20.2202, "Notification of Incidents":

(i) Obtain detailed information on the initial assessment of intake made by the licensee. Evaluate the adequacy and reliability of the assessment. Request immediate additional measurements if the initial assessment appears inadequate. Repeat the licensee's calculations that estimate the intake to ensure that errors have not been made. Assess the assumptions made in obtaining the initial assessments to make sure they are reasonable under the circumstances. The initial assessment is important because it will determine the type of actions to be taken to mitigate the consequences of the intake.

(ii) Based on the initial assessment of the intake, it may be necessary to review the licensee's plans in the following areas:

- The need for medical evaluation of the exposed person;
- The possibility of immediate initiation of therapy to reduce the committed doses;
- The need to start a bioassay program for the contaminated personnel; and
- The threshold for seeking outside expert internal dosimetry assistance. When reviewing the bioassay program, you should review the adequacy of the sampling frequencies and ensure the availability of adequate analytical capabilities.

(iii) Discuss with the licensee the measures taken to regain control of the licensed material and to preclude further contaminations.

(iv) Evaluate the need for a hazardous chemical consultant. The WDEQ can help contact chemical safety experts. The EPA may also be contacted for logistical assistance from an EPA On-Site Coordinator.

(v) Evaluate the need to dispatch a URP inspector to conduct a special inspection of the incident site, if necessary. If an inspector is not dispatched immediately, determine whether the incident requires inspection attention before the next routine inspection, based on an evaluation of its safety significance.

(vi) Request assistance from the NRC or other listed State/Federal agencies in Section 4 of this manual as necessary.

2.4 Follow-up Actions for Written Reports

(a) The URP staff is responsible for screening, evaluation, follow-up, and closeout of written reports of all types of incidents reported by licensees for byproduct and source materials.

(b) The URP staff should record the incidents on the incident form provided in Attachment A Allegation reports should be recorded on the allegation form provided in Attachment B. The reports should be forwarded to the NRC and recorded in the NMED database per the URP *Event Reporting Procedural Manual*, Subsection 4.7, Appendix B.

(c) All types of reports of incidents should be documented in an inspection report or other type of file record. Corrective actions should be tracked to completion. Any closure documents should be included in the file.

2.5 Criteria for Evaluating Special Inspections

(a) The following examples are events which normally require consideration of immediate dispatch of inspectors (typically within 2 days):

(i) Single exposure of an occupational worker in excess of the dose limits in 10 C.F.R Part 20.1201;

(ii) Loss of control of radioactive material that caused a member of the public to receive an exposure in excess of the limits in 10 C.F.R Part 20.1301;

(iii) Discovery of URP-licensed material in an unrestricted area;

(iv) An unplanned contamination event that requires a 24-hour report to NRC, as per 10C.F.R Part 30.50(b), 40.60(b), or 70.50(b), as applicable;

(v) An intake of radioactive material in excess of an annual limit on intake.

(vi) Note: If an inspector is not dispatched immediately, the URP should consider conducting a special inspection.

(b) Examples that normally require consideration of a special inspection before the next routine inspection (typically within a few weeks) may include the following:

(i) Release of radioactive material to an unrestricted area in excess of 2 times the concentration limits in 10 C.F.R Part 20.1302;

(ii) Disposal of license material in quantities or concentrations in excess of the limits in 10 C.F.R Part 20.2003, 20.2004, or 20.2005.

(iii) Loss of control of radioactive material that could have caused a member of the public to receive an exposure in excess of the limits in 10 C.F.R Part 20.1301.

2.6 Criteria for Conducting Special Inspections

(a) During a special inspection, the URP should make an initial determination of the hazard, the need for further action, and should proceed as follows:

(i) Discuss the current status of the incident with the licensee, or if not a licensee, the individual(s) who found the radioactive material;

(ii) Collect details about the cause of the incident and the incident chronology;

(iii) Review licensee follow-up actions for consistency with the regulations, license requirements, approved procedures, and the nature of the incident;

(iv) Evaluate the potential radiological consequences and personnel exposure;

(v) Evaluate the need for a medical consultant, based on the potential radiological consequences and personnel exposure;

(vi) Determine if proposed licensee actions and plans will provide a safe recovery from the incident and help prevent a recurrence;

(vii) Notify and discuss with Federal agencies, and State and local governments, as necessary, any new developments or significant changes; and

(viii) Evaluate the need for continued onsite presence of URP, and for other URP actions.

2.7 Documentation Guidance

Any follow-up actions that the URP takes on a reported incident should be summarized in writing and maintained in an official file. A formal report of the results of each special inspection should be prepared and distributed in light of the involved staff and Federal/State agencies. Evaluate each incident and determine if it meets the criteria for an Abnormal Occurrence Report per the URP *Event Reporting Procedural Manual*.

2.8 Additional Guidance on Events

(a) Confirm problem, considering the following factors:

(i) Location of radioactive material (e.g., on specific articles, on persons, along highway, in public buildings, or in private homes);

(ii) Availability of radiation monitoring resources near scene of incident (Wyoming URP, DOE Radiological Assessment teams, licensee's qualified staff, hospital, or university with radiation protection technicians).

(b) Determine how far the radioactive material has spread

(i) Assess the need for assistance from other State or Federal Agencies listed in

Section 4 of this manual;

(ii) Assess the need for the U.S. DOE to conduct an aerial survey.

2.9 Establish the Degree of the Health Hazard

(a) Possible scenarios and/or re-enactments of incident, to provide a best estimate of radiation dose.

(b) Pathways for ingestion or inhalation by persons and possible doses from intake of radioactive material.

(c) Calculate possible doses to persons from exposure to ionizing radiation (internal and external).

(d) Nature of population at risk: groups of individuals, number of individuals.

(e) Calculate total population doses (collective dose), considering the extent of radioactive material in public places.

2.10 Keep Public Informed

Inform the public about the incident through the appropriate State and Federal contacts listed in Section 4 of this manual. Consider the following factors:

(a) Extent of public risk and public perception of the risk.

(b) Extent of media interest.

(c) Confidence in validity of information reported to URP.

(d) Reassessing the measures that have been taken (e.g., health physics and medical services that have been made available to the public).

(e) Coordination of information among the WDEQ offices, Federal agencies, and State and local agencies. Ensure that other Federal agencies are informed of any information to be released to the media or the public.

(f) Assurance of correctness of information provided to the news media and the public.

(g) Actions taken by Federal agencies, States, and local authorities.

2.11 Stop Spread of Radioactive Material

Ensure that no radioactive material is further disseminated to other areas, considering the following factors:

(a) The reliability of the licensee that controls the locations or the articles where radioactive material has been detected.

(b) Steps necessary to prevent further dissemination of the radioactive material.

2.12 Control, Recovery, and Disposal of Radioactive Articles

Ensure control, recovery, and safe disposal of radioactive articles, considering the following factors:

(a) Exposure potential.

(b) Cost/benefit impacts in barring use of radioactive materials.

(c) Degree of radiation hazard.

(d) Keeping public exposure as low as is reasonably achievable.

(e) Alternative methods of decontaminating property and disposing of radioactive and contaminated materials and waste.

When it is not possible to locate the responsible licensee, or the responsible licensee is unable to take possession of any radioactive material in question, radioactive material discovered in unrestricted areas may need to be immediately disposed of through DOE (see NRC Manual Chapter 1303, "Requesting Emergency Acceptance of NRC-Licensed Material by DOE").

2.13 Examine Regulatory Significance of Incident

Examine regulatory significance of the incident and close out the URP response, considering the following factors:

(a) Possibility of generic implications and possible notifications to other affected licensees of generic problems.

(b) Value of documented case study.

(c) Need to prevent recurrence.

(d) Possible need for new rulemaking.

2.14 Follow-up Actions and Action Levels for Radiation Exposures Associated with Materials Incidents Involving Members of the Public

The actual doses to members of the public are likely to be uncertain, especially during the initial follow-up after an incident. Doses will usually be estimated in a dose range or a maximum dose based on the circumstances of the incident. For this reason, it is important to talk with exposed individuals because this can help the staff in assessing the incident and in estimating the dose.

Depending on the nature of the incident, further analysis of the estimated dose may be necessary, using techniques such as bioassays, whole body counting, and cytogenetic analysis, and should be considered as the estimated doses approach 10-20 rem and up. In evaluating the need for these types of analyses, staff should keep in mind that performing the study can help

reassure an individual who was exposed to radiation, but it can also increase the anxiety about the exposure. Therefore, staff should be sensitive to this and use their best judgement in deciding when to recommend cytogenetic analysis.

Because people are often more anxious about radiation exposure than with other hazards and risks, staff should be especially sensitive when providing information about the incident and the estimated doses. Staff must be as factual as possible about characterizing the dose based on available information, without causing undue stress. Staff should not discuss medical issues or provide medical advice to exposed individuals. Instead, staff should refer individuals to their personal physicians.

(a) Dose Range from 0 to 1 mSv (100 mrem)

Exposures with estimated doses in this range are within the public dose limit in 10 C.F.R Part 20. There are no regulatory requirements requiring reporting and notifications.
Typically, no further action is needed, but the need for additional action must be evaluated based on the specific incident.

(b) Dose Range from 1 mSv (100 mrem) to 50 mSv (5 rem)

In cases when the estimated dose is between 1 and 50 mSv (100 mrem and 5 rem), the incident needs to be evaluated following the guidance in NRC Inspection Manual Chapters MC 1301, “Response to Radioactive Material Incidents that do not Require Activation of the NRC Incident Response Plan”, and MC 1360, "Use of Physician and Scientific Consultants in the Medical Consultant Program." Staff will need to determine if a medical consultant is necessary. If a medical consultant is necessary, the medical consultant will determine whether or not a medical evaluation of exposed individuals is necessary. Staff should not discuss medical issues with an individual who was exposed, or provide medical advice. Instead, if an individual expresses concern or wishes additional information on possible medical affects, staff should refer the individual to his/her personal physician, or to a WDEQ medical consultant if WDEQ has consulted with one to analyze the incident. If additional assistance is needed, WDEQ staff can call the Radiation Emergency Assistance Center/Training Site (REAC/TS) at 865-576-1005. Costs associated with medical consultants will be billed to the associated licensee.

(c) Dose Range Greater than 50 mSv (5 rem)

For estimated doses that appear to be over 50 mSv (5 rem), assess the incident following the guidance in (b) above. If the calculated effective dose equivalent is more than 100 mSv (10 rem), further medical evaluation should be considered. Depending on the circumstances of the incident, a medical consultant may be brought in, the exposed individual will be referred to his/her personal physician, and/or REAC/TS may be consulted for additional guidance. At dose estimates in this range, and approaching 200 mSv (20 rem), the need for further analysis of the dose, as discussed above, should be evaluated.

(d) Members of the Public Who Are Pregnant

Information regarding the disclosure of pregnancy must be on a voluntary basis because of issues involving individual privacy. If, in the course of evaluating an incident involving

exposures to members of the public, staff is informed by a female member of the public that she is pregnant, the follow-up action is essentially the same as in (a) through (c) above, extending the evaluation to look at the impact on the embryo/fetus. A medical consultant will probably be asked to evaluate the incident and the likely dose to the embryo/fetus. As stated previously, staff should not discuss medical issues or provide medical advice to the woman, but should refer her to her personal physician. Additional information on exposures to the embryo/fetus can be found in: 1) Regulatory Guide 8.13, "Instruction Concerning Prenatal Radiation Exposure," and 2) National Council on Radiation Protection and Measurements Report No. 128, "Radionuclide Exposure of the Embryo/Fetus." Additionally, staff may get additional guidance if needed from REAC/TS.

2.15 Response to Transportation Accidents Involving Radioactive Materials

The URP procedures for responding to transportation accidents involving source and byproduct materials are based upon NRC Inspection Manual 1330, Nuclear/Radiological Incident Annex (Attachment D), and the State of Wyoming/WDEQ Emergency Response Plan (Attachment E). In the case of a transportation accident involving radioactive materials, the WDEQ and URP will provide the following support:

(a) Provide technical assistance in analyzing immediate and long-term effects of pollution (air, soil, and water) caused by radioactive material release.

(b) Provide technical assistance and advice on disposal of radioactive debris/waste.

(c) Notify downstream users and recommend protective actions in the event of an incident affecting surface or ground water.

3.0 Overview of URP Allegation Procedures

This section provides general information related to managing the receipt, evaluation, and follow-up and closure of allegations received by the URP.

3.1 Allegation/Alleger Definition

(a) An “allegation” is a declaration, statement, or assertion of impropriety or inadequacy associated with URP-regulated activities, the validity of which has not been established. Potential licensee wrongdoing suspected by URP staff that prompts an investigation by the URP is also processed as an allegation. A more detailed definition, including exceptions, is provided in Attachment C, “Glossary,” of this manual.

(b) An “alleger” is any individual or organization that submits an allegation to the URP or that provides information in a public forum that is recognized as an allegation involving a nuclear or radiological safety matter or possible wrongdoing related to a nuclear or radiological safety matter.

3.2 Evaluation of an Allegation

(a) There is no threshold for the acceptance of a concern that meets the definition of an allegation provided in Attachment C, “Glossary,” of this manual.

(b) Allegation evaluation is accomplished through any combination of the following:

(i) Technical review;

(ii) Inspection;

(iii) Evaluation of information requested from the affected licensee, or another URP regional or headquarters office; or

(iv) Obtaining the results of investigations or evaluations conducted by:

- NRC,
- The Department of Justice (DOJ),
- The Department of Labor (DOL),
- A State agency, or
- Another Federal agency.

3.3 Methods Through Which an Allegation May Be Received

(a) Any URP employee may receive or recognize an allegation. An alleger's concern may be made known to URP via several methods, for example:

(i) In person,

(ii) By telephone,

(iii) By e-mail, or

(iv) In print.

(b) An allegation may also be recognized by an URP staff member in information provided in a public forum including, but not limited to:

(i) Television,

(ii) Radio,

(iii) Newspaper,

(iv) Internet, or

(v) Social media (e.g., Facebook, Twitter, blog).

3.4 Allegation Intake

If an allegation is received in person or by telephone, the URP staff will be courteous,

professional, and responsive to the alleger. All communications with the alleger shall be documented on the allegation form provided in Attachment B. The alleger should be asked if they want to remain anonymous. If the alleger wants to be anonymous the URP staff should not record names or contact information.

Off-the-Record Information: The URP does not accept “off-the-record” information from allegers. An alleger who attempts to provide information “off-the-record” is to be advised that all information received by URP is accepted officially and appropriately acted upon.

A staff member who receives an allegation in person or by telephone will attempt to obtain as much information as possible about the alleger’s concern(s) so that safety significance may be determined and to facilitate URP review of the concern(s).

If the alleger’s name and contact information is not initially provided, an effort should be made to obtain it so that feedback may be provided to the alleger and so that the alleger may be subsequently contacted if additional information is needed. If the alleger makes known to the URP staff that he or she wishes to remain anonymous, the URP staff will not take down the alleger's personal information, such as their name or phone number. All allegations will be placed into the WDEQ's complaints and spills online portal at http://spills.adm.apps.deq.wyoming.gov/default.aspx. This portal allows allegers or URP staff to place allegation information into a format which provides for anonymity for the alleger. Allegers should, when they call into the URP, be informed of the online option if they would like to complete the forms themselves, otherwise the URP staff member on the phone, with the alleger will input this information themselves.

If the alleger is willing to provide his or her name and contact information, he or she is informed that URP will provide feedback regarding the allegation.

3.5 Security Concerns

If the alleger is involved in security-related activities or has security concerns, the alleger is to be reminded of the proper protocol for transmitting classified information. See Management Directive (MD) 12.2, “NRC Classified Information Security Program,” MD 12.4, “NRC Telecommunications Systems Security Program,” MD 12.5, “NRC Automated Information Security Program,” and MD 12.7, “NRC Safeguards Information Security Program,” for additional details.

If a setting is inappropriate for transmitting such information, separate arrangements will be made to enable proper transmittal.

3.6 If the Alleger Requests No Contact with URP

On occasion, an alleger will provide contact information but request no further contact with the URP. When this occurs during the intake process involving allegations received in person or by telephone, the employee receiving the allegation should explain the advantages of continued involvement in the allegation process (i.e., to facilitate URP’s understanding of the concerns raised, to obtain additional information as needed, to afford the alleger the opportunity to assess and provide feedback regarding URP’s conclusions, and to encourage the alleger’s continued involvement). If the alleger continues to request no further contact the URP will honor the request.

Allegations may also be accepted through WDEQ's online complaint system. Allegers can maintain anonymity using this system.

3.7 Matters of Potential Wrongdoing Identified by URP Staff

During inspection or assessment of licensee activities, URP staff may identify matters that involve potential wrongdoing on the part of licensee employees or licensee contract employees. Any allegation from an external source that asserts a failure to meet regulatory requirements may have the potential for being willful with respect to the licensee. Staff must therefore be alert to any implicit issues and indicators of wrongdoing when reviewing such an allegation, and the staff should identify the issues for consideration by the URP if they are not identified by the alleger as potential wrongdoing.

3.8 Alleger Identity Protection

Alleger identity protection is an important aspect of the program. All reasonable efforts are taken not to disclose an alleger's identity outside of the URP. An alleger's identity, or information that would reveal an alleger's identity, is not normally distributed or discussed among URP staff. If discussion of an alleger's identity is necessary to evaluate an allegation, the discussion shall only involve staff with a need to know.

The staff is responsible for controlling documents that could reveal an alleger's identity, using applicable allegation documentation control guidance. The staff will also ensure that the alleger's information is not unnecessarily recorded.

An alleger will be informed of the degree to which his or her identity can be protected by the URP. If an allegation is received in person or by telephone, information about alleger identity protection should be provided during the initial discussion, if possible.

If an allegation is received by other means (e.g., letter, electronic mail), and the alleger's identity and contact information is known, the URP will notify the alleger by telephone (if possible), letter, or electronic mail and explain to the alleger the degree to which his or her identity can be protected. This action is taken so that an alleger does not incorrectly assume that his or her identity is protected by URP under all circumstances.

Staff should be sensitive to the location of allegation-related discussions in order to provide reasonable assurance that sensitive allegation information is not disclosed to staff without a need-to-know or to non-URP personnel.

As a general rule, documents containing the alleger's identity and information that could identify the alleger are maintained in the official allegation database.

URP- generated documents related to an allegation are not to include information that could identify an alleger, with the exception of allegation intake documentation.

URP practice is to neither confirm nor deny to a licensee or the public that an individual is an alleger.

Inspections and inspection-related documents should address relevant issues without acknowledging that an issue was raised in the context of an allegation. Approval of the URP

Program Manager is required if a licensee is to be informed that an inspection activity is related to an allegation. The licensee is notified when it is deemed necessary during the conduct of an inspection requested by a worker in accordance with Chapter 5 Section 3(a) of the URP rules. Sometimes, the licensee is already aware of the allegation based on an earlier Request for Information (RFI) related to the allegation.

Information identifying the alleger may be released to the licensee when the alleger has clearly indicated no objection to being identified, and releasing the alleger's identity is necessary to obtain resolution of the allegation or otherwise serves the needs of the agency. When information identifying the alleger is released to the licensee:

(a) The identity of the alleger should normally be provided to the licensee verbally rather than in a letter requesting information from the licensee.

(b) Written documentation of the alleger's lack of objection to the identity release will be noted in the related allegation file.

3.9 Limitations on Alleger Identity Protection

All allegers are informed of the limitations on URP's ability to protect their identity:

(a) During the initial receipt of the allegation, or other discussion with the alleger prior to the issuance of an acknowledgment letter, if possible; or

(b) In an acknowledgment letter (after the initial receipt of the allegation.

The alleger is informed that URP may be compelled to disclose his or her identity under one or more of the following circumstances:

(a) Disclosure is necessary because of an overriding safety issue.

(b) Disclosure is necessary pursuant to an order of a court or URP adjudicatory authority or to inform Congress or State or Federal agencies in furtherance of URP responsibilities under law or public trust.

(c) Disclosure is necessary to support a hearing on an enforcement matter.

(d) Disclosure is necessary to further a wrongdoing investigation.

(e) The alleger has taken actions that are inconsistent with and override the purpose of protecting the alleger's identity.

(f) Disclosure is mandated by the Freedom of Information Act (FOIA) or Wyoming Public Records Act.

(g) URP may reveal an alleger's identity outside the agency if the alleger has clearly stated no objection to being identified. However, this course of action is not normally taken unless releasing the alleger's identity is necessary to obtain resolution of the allegation, or otherwise serves the needs of the agency.

(h) The decision to reveal an allegers identity will be made at the URP Program Manager level or higher.

3.10 Allegations Involving Discrimination

For allegations involving discrimination, the URP will work with the Department of Labor on a case by case basis. These requests may involve technical issues associated with protected activity, the organizational structure of employers, or WDEQ requirements. WDEQ is available to assist DOL personnel and individuals with accessing WDEQ information, understanding technical issues, or determining whether an individual is engaged in protected activity. The URP Program Manager is the WDEQ contact if DOL is requesting information about a specific allegation. If this contact occurs, staff should respond promptly because DOL investigators have a short statutory time frame within which to complete their investigation.

3.11 Processing the Received Allegation

(a) Actions of the Receiving Employee:

(i) A URP employee receiving an allegation will record the allegation on the form in Attachment B (Allegation Casework Review Summary Sheet) within 5 calendar days of receipt of the allegation, and will inform his or her supervisor of the allegation. Additionally the employee receiving the allegation will enter the allegation into the State database as discussed in Section 3.19. If the alleger wishes to remain anonymous, the URP employee will not record the allegers personal information, such as their name or phone number.

(ii) Generally, action will not be taken to determine the validity of an allegation, nor will an allegation be discussed with licensees or other affected organizations until after the designated staff has briefed appropriate URP management.

(b) Allegation Documentation

(i) A unique identifying number is established for each allegation when the URP documents the allegation.

(ii) The URP establishes file for each allegation to contain all allegation- related documentation. The allegation files are to be retrievable by allegation number (i.e., there must be no alleger identifying information on the outside of the allegation file folder).

(iii) Documentation that contains the identity of an alleger or other information that would identify an alleger may be separated from the official allegation file if it is appropriately protected.

- The documentation must have the appropriate cover sheet to indicate that it contains sensitive allegation information.

- The documentation should be conspicuously marked (typed or stamped) to indicate that the document identifies an alleger, depending on the document type.

- The following are examples of document types that could identify an alleger:
  - A letter to an alleger;
  - A letter from an alleger;
  - A document from an alleger; or
  - Another type of document that specifically identifies the alleger or contains other alleger identifying information.

(c) Storage of Official Agency Allegation Files and Documents

(i) Official agency allegation files shall be maintained online and in some cases a physical storage location where LQD maintains sensitive confidential information such as cultural resource locations. The physical storage of the sensitive information is kept under lock and key and is accessible by only the records department. To access files, DEQ personal can requests files through the records group.

(ii) Keycard or keyed access to URP buildings with locked file cabinets maintained by the records group provides adequate security for allegation files and documents containing the identity of an alleger.

(iii) The URP will limit the distribution of allegation file documentation outside of the URP office to allegation information that is being transferred to another regional office or documentation that is produced in response to an allegation-related FOIA request.

3.12 Allegation Evaluation

(a) Acknowledgment Letter
When the identity of an alleger is known, an acknowledgment letter is to be issued to the alleger, normally within 30 calendar days of the date of receipt of the allegation. The acknowledgment letter may be prepared and signed by the appropriate URP Program Manager or Division Administrator. The acknowledgment letter shall include a restatement of the alleger's concerns, along with information relevant to the issues involved (e.g., the identity protection, important contacts, whether concerns are being referred to another entity, or whether an RFI from the licensee is being considered).

Whenever possible, acknowledgment letters (and all other written correspondence to an alleger) should be sent using a delivery mechanism that allows for verification of receipt. **Note:** For instances in which an alleger requests electronic correspondence (e-mail), the URP should request that the alleger verifies receipt of the information.

(b) For sensitive, security-related concerns, the acknowledgment letter will reiterate the concern(s) raised, but will inform the alleger that URP, following evaluation of the concerns, may only be able to provide limited information regarding the staff's review, assessment, and findings. The letter shall not include classified or sensitive

security information.

(c) Alleger Interview by URP Technical Staff

In some cases, an interview with the alleger by the URP technical staff may be warranted.

Depending on the nature of the allegation and the time sensitivity of the issue, assistance from other resources may be requested. If an alleger requests an interview with URP to more clearly explain his or her concerns, or to present information, every effort should be made to accommodate such a request. All contacts with the alleger should be documented and forwarded to the allegation file.

(d) Evaluation by URP Technical Staff

(i) After completing inspection activities or review as directed by management to address an allegation, technical staff will notify designated responsible staff and the management of the completed actions. The allegation status can then be tracked, and subsequent allegation process activities may be initiated (e.g., the development of closure documentation).

(ii) The technical staff will document evaluation of each allegation concern in a report or other appropriate correspondence and submit the documentation to management for inclusion in the allegation file, along with all supporting information.

(e) Allegation Transfers, RFIs, and Referrals

(i) Informing an Alleger of an Allegation Transfer, RFI, or Referral

When it is determined that information is to be requested from the licensee or an issue is to be referred to another Government agency or external entity, the alleger should receive feedback regarding such action. The notification may be provided via a letter to, or a documented conversation with, the alleger. If an allegation is transferred within the WDEQ/URP, feedback may be provided to the alleger by either the receiving WDEQ office or the WDEQ office to which the allegation is transferred.

(ii) Allegation Transfers to WDEQ or NRC Regional Offices or Headquarters

When the URP office receives an allegation and determines that the allegation should be transferred to another WDEQ or NRC regional or headquarters office, the offices must contact each other before the transfer. The office to which the allegation is to be transferred should be in agreement that it is the appropriate office to evaluate the allegation. If agreement is reached, the allegation is transferred.

(f) Requests for Information from the Licensee

(i) Policy Regarding the Issuance of an RFI to the Licensee

- Engaging the licensee in the evaluation of an allegation provides

URP with unique insights into the licensee's handling of employee concerns and provides the licensee with unique insights into its own safety culture.

- A licensee has primary responsibility for ensuring the safe operation of the facility and can promptly address issues through ready access to site personnel, equipment, and documentation related to allegation concerns; therefore, the URP should request information from the licensee in support of allegation closure whenever possible and appropriate.

(ii) Conditions Inhibiting the Issuance of an RFI to the Licensee

- A licensee may be asked to provide information regarding an allegation as deemed appropriate. However, in other circumstances, an RFI from the licensee should normally <u>not</u> be considered if any of the following conditions apply:

  - Information cannot be released in sufficient detail to the licensee without compromising the identity of the alleger (unless the alleger has no objection to the URP's requesting information from the licensee and understands the possibility that his or her identity may be compromised).

  - The licensee could compromise a URP investigation or inspection because of knowledge gained by the licensee from the RFI.

  - The allegation is made against senior licensee management or parties who would normally receive the RFI, such that an independent and effective evaluation is unlikely.

  - The basis of the allegation is information received from a Federal or State agency that does not approve of the information being released to the licensee in an RFI.

(iii) Requesting Information from the Licensee in Response to an Overriding Safety Issue (OSI)

- If an allegation raises an OSI, then URP staff will normally issue an RFI to the licensee (verbally first, then in writing) regarding the allegation. In this instance, the consideration of a waiting period for alleger feedback regarding a proposed RFI is waived.

- **Note:** The URP may call the alleger, if possible, to determine if the alleger wishes to provide any additional information or feedback.

(iv) Informing the Alleger About an Allegation-Related RFI to the Licensee

- Before an RFI is provided to a licensee regarding an allegation, all reasonable efforts should be made to notify an alleger whose identity is

known of the planned RFI. This includes instances where the alleger has requested no contact.

- The fact that an alleger is aware that an RFI may be or will be provided to the licensee is normally confirmed via the acknowledgment letter to the alleger.

- However, this understanding may be otherwise documented (e.g., during the initial documented contact with the alleger, or in a telephone conversation record).

(v) RFI Letter to the Licensee

- The RFI letter to the licensee regarding an allegation should reference the allegation number and inform the licensee of the concern(s) in a level of detail that will enable the licensee to evaluate the concern but should not include the identity of the alleger or information that could permit the licensee to identify the alleger. Please refer to Exhibit 14 in NRC Allegation Manual for guidance in drafting a letter.

- The letter should request that the licensee review the matter and provide a written report of the results of that review.

- Staff expectations regarding the quality and scope of the licensee's evaluation, the qualifications and independence of review personnel, and limitations on the distribution of the URP letter and its enclosure(s) should be conveyed, and the licensee should be requested to describe how these attributes were met in its response to the URP.

- If interviews are to be conducted or if samples of documentation, systems, structures, or components are to be evaluated, the licensee is expected to provide the basis for determining the number of individuals interviewed, the interview questions used, and the adequacy of sample sizes.

- The licensee is expected to note any instance identified during the course of its review in response to a request for information letter indicating that a URP requirement may have been violated.

- Letters requesting information from licensees regarding allegations are not issued on the public docket.

- The letter requesting information from the licensee shall also request that the licensee contact the URP to ensure a common understanding of the scope of the allegation and the URP's expectations for follow-up and response, and to discuss the licensee's plans for evaluating the concerns that are the subject of the RFI.

(vi) Staff Review of Licensee Response to an RFI

- The technical staff will review the licensee's response to an RFI for adequacy.

- The staff's review should include some alternate verification of aspects of the information provided. Acceptable verification methods include, but are not limited to, the following:
  - Verify the existence and applicability of technical references, procedures, corrective action documentation, or calculations noted in the licensee's response.
  - Review recent inspection results in the functional area related to the allegation.
  - Ask follow-up questions on the material provided by the licensee.
  - Conduct an independent inspection or technical review.
  - If the licensee does not conduct a thorough review, it may be necessary for URP to request that the licensee perform a supplemental review or to independently inspect or investigate the allegation concern(s).
  - The staff should inform the licensee of an identified inadequacy in the licensee's response to the RFI.
  - URP staff conclusions with regard to the licensee's response and any independent verification, inspection, or investigative efforts should be documented for inclusion in allegation closure documentation.

(g) Referral of Concerns About Agreement State Licensees

(i) In accordance with the terms of the agreement between NRC and an Agreement State, NRC must refer concerns received regarding Agreement State licensees to the Agreement State for review and evaluation.

(ii) If, after the URP is described to an individual who contacts NRC with concerns about an URP licensee, the concerned individual agrees to contact and be contacted directly by the URP, the concerns are provided to the appropriate Regional State Agreements Officer (RSAO) for referral to the URP.

(h) Referral of Industrial Safety Concerns to the Occupational Safety and Health Administration (OSHA) Concerns submitted to URP within the purview of OSHA will be forwarded to the Wyoming Department of Workforce Services at 307-777-8650.

(i) Referral of Concerns to Government Agencies and Military Organizations including other Agreement States Concerns under the jurisdiction of Government agencies and the military or other organizations outside URP's jurisdiction will be referred by designated URP staff to the appropriate

organization. [For example, concerns about environmental quality related to other than nuclear material or concerns about the radiological aspects of Superfund sites are to be referred to the Environmental Protection Agency (EPA)].

(i) Notification of Federal, State, local law enforcement agencies, the Wyoming Attorney General, and the determination of the amount of information to be provided to them are the responsibility of the URP and Director of WDEQ. Please see Section 4.0 of this manual for a list of State of Wyoming agencies to be notified in the event of major radiological events.

(ii) The concerned individual should be informed that the matter is not within URP regulatory jurisdiction and that he or she may contact any of these organizations directly.

(iii) Identity protection of the concerned individual should be considered in staff referrals of such matters in accordance with the identity protection guidance in this manual.

(j) Referral to the Office of the Attorney General

Occasionally, a submitted allegation may also include one or more assertions related to the performance of URP staff or contractors and/or mismanagement of agency programs or operations. Issues regarding suspected improper conduct by URP employees or URP contractors will be brought directly or through appropriate URP management to the attention of the AG. These issues are not considered allegations and are not to be described as such.

Any records pertinent to matters involving the AG should be excluded from the allegation file or appropriately redacted and forwarded either directly to the AG or to the director for referral to the AG, as appropriate.

3.13 Periodic Status Letters to Allegers

In instances of unusual delay in evaluating an allegation, the URP should ensure that the alleger is provided periodic status letters regarding the URP's evaluation of concerns. Normally, the alleger should be advised every 180 days or sooner of the status of pending open allegation concerns. For wrongdoing issues, the alleger should be informed that the review is in progress. If a closure letter is to be issued to the alleger within 2 weeks of the date a status letter is due, it is not necessary to send the status letter.

3.14 Allegation Closure

(a) Staff Action

As assigned, the technical staff shall develop closure documentation for each allegation concern, describing the scope and depth of the review performed and indicating the staff's conclusion as to the validity of the concern. The responsible URP Program Manager shall review and concur in the basis for closing each allegation concern, as developed by the technical staff.

(b) An allegation cannot be closed until all the concerns within the allegation are closed and a closure letter has been issued to the alleger (if the alleger's identity is known) or a document has been submitted to the allegation file that discusses closure of each concern, if the alleger's identity is unknown, if no written correspondence is to be provided to the alleger at the alleger's request, or if the concerns are URP-identified or licensee- identified.

(c) Documentation of Allegation Evaluation

A final document (e.g., memorandum, draft closure letter, inspection report, technical evaluation, field notes, investigation report) will be prepared by URP staff to document the evaluation and closure of the allegation concerns. The document should describe the safety/security and regulatory significance for any substantiated concern. Please refer to NRC Allegation Manual Exhibit 18 and 20 for guidance in drafting the letter. If a closure letter or closure memorandum makes reference to a licensee's RFI response, the closure documentation should clearly:

(i) Identify each allegation concern as provided or as modified by the alleger.

(ii) Describe the licensee's evaluation and response.

(iii) Document URP's evaluation of the licensee's response and overall conclusions regarding the validity of the concern(s), including any URP staff independent verification, inspection, or investigative efforts conducted to validate aspects of the licensee's response.

(iv) If an alleger cannot be contacted, then the basis for not contacting the alleger will be documented in the allegation file.

(v) Information provided in closure letters to allegers with regard to security-related concerns will be limited in accordance with the sensitivity of the concern, as defined by the following categories which describe the concern sensitivity from high to low. This category should be determined based on the allegation concern, as received, assuming that the concern is true:

- Category I – Security-related concerns that involve a potential generic security vulnerability. Letters to allegers will reiterate the concerns, but provide no details regarding the URP's evaluation or conclusion.
- Category II – Security-related concerns that, if true, would constitute a more than minor finding or violation, as determined by applicable guidance or review panels. Letters to allegers will reiterate the concerns and provide limited information regarding the URP's evaluation and conclusions so that an adversary may not exploit the information.

- Category III – Security-related concerns that would constitute a minor violation or finding, as determined by applicable guidance or review panels. Letters to allegers will reiterate the concerns and describe the actions taken by the staff to evaluate the concerns and the staff's conclusions regarding the validity of the concerns. but the letters will not include a description of the

compensatory actions so that an adversary may not exploit the information.

3.15 Alleger Response After Closure

An alleger may provide feedback regarding URP's closure of his or her allegation by indicating that the URP's response was, in some way, insufficient, inaccurate, or otherwise unacceptable. In such instances, responsible URP staff should review the alleger's response against the closure correspondence provided to assess the validity of the alleger's feedback. The matter will be discussed with senior management to determine appropriate additional actions. As appropriate, a URP response should be provided to the alleger, normally within 30 days of receiving the alleger's feedback, describing the actions taken by URP in response. If it is anticipated that it will take longer than 30 days to respond to the alleger's feedback, or if the alleger's feedback includes a new allegation, an initial response should be provided to the alleger acknowledging the alleger's feedback and/or the new allegation, and indicating that additional URP feedback is forthcoming.

3.16 URP Response to Fears of Retaliation

URP may take action to prevent retaliation before it occurs at a licensee's facility.

If URP receives a credible report from an individual expressing reasonable fears of retaliation for engaging in protected activity, and the individual is willing to be identified to the licensee, the URP Program Manager should initiate actions to alert the licensee that URP has received information from an individual concerned that retaliation may occur for engaging in protected activities.

The need to notify the licensee should be discussed at a meeting with representatives from URP and the Wyoming Attorney General's (AG) office. If the AG considers it appropriate to notify the licensee, the URP Program Manager should make a recommendation to the Land Quality Division Administrator or WDEQ Director that senior licensee management be notified by either holding a documented meeting, a documented management telephone call, or issuing a letter.

The general purpose of this interaction is to inform licensee management of the URP's knowledge of the matter, potential effects on the safety conscious work environment, consequences to the licensee if discrimination was to occur, and the URP's intention to monitor the situation. So as not to expose the alleger to undue publicity, letters of this nature should not be docketed or otherwise made publicly available, and if a meeting is held, it should be closed to the public. The licensee should be asked to respond to the URP's concerns in writing. The licensee's response should not be docketed or otherwise submitted to the URP general file.

When a number of individuals from the same licensee or organization express concern about the potential for retaliation or other management behaviors that discourage the reporting of safety issues, other actions may be warranted, especially if a history of discrimination findings or settlements exists. Actions might include an inspection, investigation, survey, issuance of a Notice of Violation or other techniques for assessing the climate for raising concerns. As an example, please see definition of the term "chilling effect" in Attachment C, "Glossary," of this manual for further information.

3.17 Handling Allegations That May Impact Licensing or Certification Decisions or Allegations That Are Filed Late

Ideally, all allegations concerning a particular licensing, certification, or operational matter will be satisfactorily resolved by the applicant before any license or certificate is issued or any operational decision is made. If allegation concerns having a potential impact on the safety of a facility relate to the staff's findings for pending licensing or certification decisions, these allegation concerns are termed "late-filed" and must be resolved by the applicant before the URP can issue a license or certificate. The applicant's resolution of less significant allegation concerns will be evaluated independent of the issuance of the license or certificate.

3.18 Wyoming Public Records Act

Public records requests shall be completed in accordance with state laws and WDEQ policies and procedures.

3.19 Training of the URP Staff

Since any URP employee may receive an allegation, and since URP employees must be able to recognize an allegation, all employees shall receive initial training with regard to the implementation of the allegation process. After completing initial training, all regional and headquarters office staff who perform work involving URP-regulated activity and/or who have the opportunity to periodically interface with URP licensee personnel or external stakeholders should receive allegation refresher training at least every three years.

3.20 Allegation Tracking and Follow Through

Once an allegation is received, that allegation will be assigned to a URP employee who will be responsible for ensuring the allegation is appropriately responded to. This employee will complete all of the necessary documentation, and will report directly to the URP manager regarding the allegation. This employee shall:

(i) Serves as the administrative point of contact for the processing and tracking of allegations assigned to the regional and headquarters offices.
(ii) Administers the action office's allegation program as set forth in the this document.
(iii) Establishes and maintains files, prepares reports, and schedules and participates in meetings regarding the allegation.

(iv) Prepares and distributes meeting minutes and coordinates allegation-related activities with the following, as appropriate:
   1. Management and responsible staff,
   2. The AG
(v) Ensures that the allegation file contains all documentation provided by the alleger and all documents used in making decisions regarding the allegation. The employee shall ensure that the allegation is placed in the complaint electronic management system (EMS) either by the alleger or by the employee. (See www.deq.wyoming.gov – Resources – Submit a Complaint)
(vi) Tracks allegation activities from receipt to closure on the EMS.

(vii) Responds to requests for information related to allegations.
(viii) Ensures that management and responsible staff are informed of allegations under their purview.
(ix) Provides support to the responsible manager, such that the responsible manager is able to inform the resident inspectors and other inspectors, as appropriate, about open allegations, and past allegation trends related to areas to be inspected.
(x) Ensures that allegation-related correspondence and other staff-generated documentation related to allegations is consistent with the requirements of this procedure.
(xi) Ensures that actions taken to evaluate allegations and effect allegation closure are properly documented and appropriately address the concerns provided.
(xii) Provides, or supports staff in providing information to an alleger regarding the evaluation of his or her allegation, as appropriate, unless notifying the alleger would interfere with ongoing AG activities or be detrimental to the protection of sensitive and security-related information.

4.0 Communicating Events to the Appropriate State and Federal Agencies

- Events and allegations may be reported to the Uranium Recovery Program (URP) at 307- 777-7756.

- For after-hours reporting of events and allegations, the URP may be contacted via the Wyoming DEQ 24-hour spill response number: 307-777-7781. In addition to the spill response phone number, the WDEQ also has an online form available for reporting complaints, spills, or releases (http://spills.adm.apps.deq.wyoming.gov/) , as well as a website devoted to Spills and Emergency Response (http://deq.wyoming.gov/admin/spills-and-emergency-response/). Information received via the online form or 24-hour phone number will be forwarded by the WDEQ Spill Coordinator to the URP in a timely fashion.

- For major radiological events and allegations emergencies, the URP will coordinate with other State Agencies, the NRC (24-hour Headquarters Operations Center, 301-816-5100; also the Radiation Emergency Assistance Center/Training Site (REAC/TS) at 865-576- 1005), and EPA (Region 8 National Response Center, 800-424-8802) in compliance with the Wyoming Response Plan and Department of Environmental Quality Response Plan (see Attachments E and F). Wyoming has a Radiological Response Team, a subdivision of the State Emergency Response Commission, which consists of the following entities:

  - Office of Homeland Security, Radiological Program,
    Mr. Scott Ramsay (307-777-4951)
  - Wyoming Department of Environmental Quality
    Mr. Joe Hunter, Spill Coordinator (307-777-7781)
  - Wyoming Department of Health (Public Health Emergency Line, 888-996-9104)
  - University of Wyoming Health and Safety Office (307-766-3277)
  - Wyoming Department of Transportation, Highway Patrol Division (307-777-4301)
  - Wyoming Department of Transportation, Construction and Maintenance Division

(307-777-4375, after hours road hazard reporting 800-442-9090)

- As described in Section 2 of this manual, the following Federal agencies may also be contacted depending on the severity of the incident:
  - FBI/Federal Bureau of Investigation, Washington D.C. (855-835-5324), Cheyenne WY (307-632-6224), Denver, CO (303-629-7171)
  - DOE/Department of Energy 24-hour Emergency Operations Center (202-586-8100

Attachment A

INCIDENT CASEWORK REVIEW SUMMARY SHEET

URP REVIEW BY:_____DATE:_____A/S OR REGION: _____

STATE INCIDENT NUMBER OR OTHER FILE IDENTIFICATION: _____

LICENSEE:_____LICENSE # _____

LOCATION OR SITE OF EVENT:_____

DATE OF INCIDENT:_____ DATE OF 1ST CONTACT: _____

DATE OF INVESTIGATION:_____INVESTIGATION TYPE: SITE G PHONE G NEXT INSP G NONE G G

OVEREXPOSURE

- ☐ RELEASE OF RAM
- ☐ LOST/STOLEN/ABANDONED RAM
- ☐ CONTAMINATION EVENT
- ☐ LOSS OF CONTROL
- ☐ OTHER: _____
- ☐ DAMAGE TO EQUIPMENT OR FACILITY
- ☐ EQUIPMENT OR PROCEDURE FAILURE
- ☐ LEAKING SOURCE
- ☐ TRANSPORTATION
- ☐ MEDICAL EVENT

BRIEF SUMMARY OF INCIDENT _____

_____

_____

_____

EVENT MET AO REPORTING REQUIREMENTS? Y N POSSIBLE GENERIC PROBLEM? Y N

STATE'S ACTION: _____

_____

FINAL DISPOSITION: _____

_____

_____

NO.	COMMENTS FOR REPORT APPENDIX

INVESTIGATOR_____

SUPERVISORY REVIEW BY:_____DATE: _____

FINDINGS DISCUSSED WITH:_____ON: _____

Attachment B

ALLEGATION REPORT FORM

FACILITY NAME:

Alleger:_____

Address: _____

_____

_____

Home Phone:_____

Work Phone:_____

Alleger's preference for method of contact (mail, phone, etc.) And time of contact:

Date Received:_____Received by:_____Title:

Identity Protection Requested: Y or N

Disclosure of Alleger's Identity:
The Individual receiving the Allegation: Inform the alleger of the degree to which their identity can be protected. This is necessary since some allegers may incorrectly assume that the URP can or will protect their identity under all circumstances. Inform individuals to whom the URP has not granted confidentiality in accordance with the Commission's "Statement of Policy on Confidentiality" **verbatim** of the following:

In resolving technical issues, the URP intends to take all reasonable efforts not to disclose your identity unless

- You clearly indicate that you have no objection to being identified.
- Disclosure is necessary because of an overriding safety issue.
- Disclosure is necessary pursuant to an order of a court or URP adjudicatory authority or to inform Congress or State or Federal agencies in furtherance of URP responsibilities under law or public trust.
- Disclosure is necessary in furtherance of a wrongdoing investigation, including an investigation of harassment and intimidation (H&I) allegations.
- Disclosure is necessary to support a hearing on an enforcement matter.
- You have taken actions that are inconsistent with and override the purpose of protecting your identity.

For allegations involving H&I, the URP will normally not disclose your identity during an URP investigation if you are the victim of the discrimination.

For allegations involving wrongdoing (e.g., allegations involving record falsification, willful or deliberate violations, or other deliberate conduct in violation of URP regulatory requirements), your identity may be disclosed at the URP's discretion in order to pursue the investigation.

Information provided under the Wyoming Public Records Act will, to the extent consistent with that act, be purged of names and other potential identifier of allegers; however, disclosures may be necessary under this act.

If it is necessary to release your identity for reasons discussed above, we will make reasonable efforts to contact you and explain the need for the disclosure.

U.S. Department of Labor (DOL) RIGHTS (if applicable): If you believe you have been discriminated against for engaging in a protected activity, you may have personal remedies through the DOL. The complaint must be submitted in writing within 180 days of occurrence of the discriminatory act to ensure that your personal employee rights are protected. The complaint should be filed with the Office of the Administrator Occupational Safety and Health Administration, DOL, Room S3502, 2000 Constitution Avenue, NW, Washington, DC 20210, or with the regional DOL office having jurisdiction over the matter.

Confidentiality Protection Requested: Y or N

What is the allegation or concern?

How did alleger find out about the allegation or concern?

Attachment B (continued)

Where did alleged action or activity occurred?
When did allegation or concern occur?
Who is involved/witnessed action or activity?
How or why did it occur?
What evidence or records, if any, can be examined?
Did the individual express a concern to the licensee, facility or Agreement State involved?
What is the status of the licensee's, facility's, or State's action?
What is this an issue of? (Circle all applicable): (a) Safety; (b) Safeguards; (c) Drugs; (d) Falsification; (e) Discrimination (advise alleger of the 180 day DOL reporting requirement); (f) Agreement State personnel wrongdoing; (g) Agreement State performance; (h) Agreement State Licensee.
The alleger informed verbatim of the limitations on the protection of identity as described in Part I (A)(1)(b) through (e) of the allegations handbook 8.8 of Protection of Alleger Identity: Yes or No

PREPARED BY:	DATE PREPARED:
DATE PROVIDED TO STP OAC:	

Attachment C

Glossary

Adverse Action

An action that may adversely impact the compensation, terms, conditions, or privileges of employment including, but not limited to, a failure to receive a routine annual pay increase or bonus, demotion or arbitrary downgrade of a position, transfer to a position that is recognized to have a lesser status or be less desirable (e.g., from a supervisory to a non-supervisory position), failure to promote, overall performance appraisal downgrade, verbal or written counselling, or other forms of constructive discipline, or termination.

Allegation

A declaration, statement, or assertion of impropriety or inadequacy associated with URP-regulated activities, the validity of which has not been established. Excluded from this definition are:

- Technical questions generated by URP staff. URP staff members should direct their technical concerns to URP management for evaluation within appropriate processes (e.g., inspection program, differing professional opinion program);
- Inadequacies provided to URP staff by licensee employees acting in their official capacity;[1]
- Matters already entered into a licensee's corrective action program that are not otherwise accompanied by an assertion of inadequate licensee followup;[2]
- Matters being handled by other formal processes, such as contentions filed in hearings or other formal proceedings;
- Misconduct by URP employees or URP contractors;
- Non-radiological occupational health and safety issues;
- Concerns related to Agreement State licensee activities when the concerned individual agrees to have his or her concerns and identity provided to the Agreement State;
- Performance or wrongdoing concerns regarding organizations or personnel from State regulatory bodies that oversee Agreement State licensee activities;
- Licensing activities that are forwarded to URP that involve law enforcement and other Government agencies.

1. This exclusion is intended to clarify that inadequacies discussed during official routine conversations between licensee employees and URP staff are not intended to be treated as allegations. However, if the information provided by the licensee employee involves a wrongdoing issue or the employee expresses dissatisfaction with the licensee's handling of the

issue or another licensee, the information should be treated as an allegation.

2. Licensee corrective action processes provide the primary mechanism for the identification and resolution of problems. Once an issue is entered into the corrective action process, the licensee evaluates an identified problem, categorizes it in terms of safety significance, and takes action toward resolution. Unless a concerned individual can articulate why an item entered into the corrective action process was not or will not be handled properly by the licensee, such items should not be processed as allegations.

Alleger

An individual who or an organization that submits an allegation to URP or NRC or that provides information in a public forum that is recognized as an allegation. Anonymous concerns are accepted.

Allegation File

A file that contains the documentation concerning an allegation.

Allegation Management System

Refers to a database where incident/allegation information is stored.

Chilling Effect

A condition that occurs when an event, interaction, decision, or policy change results in a perception that the raising of safety concerns to the employer or to the URP is being suppressed or is discouraged.

Confidential Source

An individual who requests that URP formally confirm, in writing, its intent to protect the individual’s identity.

Confidentiality

Refers to identify protection of an alleger. The URP cannot grant confidential source status and will protect the alleger's wishes to be anonymous by not recording contact information such as name, phone number, etc.

Discrimination

Adverse action taken by an employer against an employee, at least in part, for engaging in WDEQ protected activities.

Emergency Incident

An event in which the loss of control of radioactive material requires immediate action by

the URP because it is causing, or has high potential to cause, a significant health and safety risk to members of the public.

Event and Allegation Manual

Refers guidance given to URP staff on how to evaluate and handle events and allegations.

Identity Protection

A term that refers to the protection of information that directly or otherwise could identify an alleger by name and/or the fact that an alleger provided information to URP. The URP does not grant confidentiality status and protects the identity of the alleger by not recording contact information.

Inspection

For the purposes of this procedure, an evaluation conducted by the Wyoming URP staff and used to evaluate an allegation.

Licensee

Means a person who is licensed by the Department in accordance with the Environmental Quality Act and the Uranium Recovery Program Rules.

NMED

The Nuclear Material Events Database (NMED), maintained by NRC, is a historical collection of incidents and events that have occurred throughout the United States involving the use of radioactive material covered under the Atomic Energy Act. This excludes events occurring at nuclear power plants.

NMSS

Office of Nuclear Material Safety and Safeguards

Overriding Safety Issue (OSI)

An issue that may represent an actual or potential immediate and/or significant threat to public health, safety, or security, warranting immediate action by the licensee to evaluate and address the issue.

Protected Activity

Activity related to the administration or enforcement of a requirement imposed under the Wyoming Environmental Quality Act, as amended, which include, but are not limited to, providing WDEQ or the employer with information about alleged violations of either statute or any requirements imposed under either statute; refusing to engage in any practice made unlawful under either statute if the employee identifies the alleged illegality to the employer; requesting WDEQ to institute action against the employer for administration or enforcement

of these requirements; testifying before any State or Federal proceeding regarding any provision of the statutes; and assisting or participating in, or preparing to assist or participate in, these activities.

Radioactive Material Incident

Any event, reported to URP or NRC that involves or may involve the loss of control of radioactive material. It may not be known whether the radioactive material is subject to NRC or Agreement State jurisdiction when the incident is reported.

Redaction

The process of concealing information to reasonably assure that a document related to an allegation does not contain alleger identifying information or classified, Safeguards, sensitive security, privacy, or proprietary information.

Referral

Requesting another Department or external entity to provide allegation-related feedback, forwarding an issue to another Department or outside entity in its entirety. Specifically an allegation is referred when the issue is not under the URP purview for examples radioactive material outside the scope of Wyoming's Agreement or when the URP must obtain feedback from another Department or outside entity to respond to the concern.

Request for Information (RFI)

A request by the URP for information from the licensee regarding the validity of an allegation concern to enable a complete URP assessment in response to the concern.

Staff

As it relates to this manual, Wyoming Department of Environmental Quality (WDEQ) technical, investigative, and other administrative members including those that may assist WDEQ members.

Wrongdoing
A willful violation of regulatory requirements through deliberate action or a violation resulting from careless disregard of regulatory requirements.

Attachment D

State of Wyoming Response Plan (October 2008), Nuclear/Radiological Incident

Annex Purpose

The purpose of the Nuclear/Radiological Incident Annex is to serve as a guide for state and local agencies and to provide guidelines to assist public safety personnel in their preparedness activities. This annex applies to Nuclear/Radiological incidents including accidents, terrorism, and sabotage. The annex also provides means for state agencies to interface with local jurisdictions in response to any incident involving radioactive materials. The annex identifies responsibilities and provides for the coordination of state agencies with local jurisdictions to include coordination with other states in an effective response to incidents involving radioactive materials.

Scope

The level of state response to a specific incident is based on a number of factors including the ability of local resources to respond, the type and extent and/or amount of material involved, the extent of impact or potential impact on the environment, and the size of the affected area. In the event of an incident, licensees, local jurisdictions and the state of Wyoming have responsibilities related to response and recovery.

Shipper/Carrier/Licensee

The shipper, carrier, and licensee must be in compliance with all federal, state, and local regulations. They are responsible for notifying proper authorities of an incident, providing expertise and shipping information to public safety and response personnel; providing equipment and personnel to conduct clean-up and recovery of the incident site; and reimburse response agencies as provided by law.

Local Jurisdictions

The “local jurisdiction” is defined as that local governmental entity which authorizes, regulates, or is otherwise deemed responsible for the health, welfare, and protection of residents and their property within the geographical boundaries in which a radioactive material incident occurs.

Local jurisdictions have the primary responsibility for performing emergency response functions. Local emergency management personnel, law enforcement officials, fire department officials, and emergency medical technicians/paramedics will provide their usual range of emergency services for an incident involving radioactive materials. This includes the responsibility for having personnel trained in radiological protection which would include scene assessment; application of protective measures (time, distance, and shielding); the use of instrumentation; maintaining a current roster of trained personnel; and maintaining an adequate quantity of radiological instruments/equipment.

In many cases, shippers/carriers/licensees may not be able to exercise their responsibilities quickly enough to protect the public from the consequences of a

radiological incident. The local jurisdiction must be prepared to effectively initiate life- saving and protective measures. This includes, but may not be limited to:

(1) Emergency planning;
(2) Information gathering and exchange;
(3) Situation analysis;
(4) Evacuation and shelter of persons threatened;
(5) Rescue and medical care;
(6) Initiating and supporting radiological monitoring activities;
(7) Fire fighting;
(8) Access/egress control;
(9) Public information;
(10) Direct protection actions and decontamination when recommended by appropriate technical authorities ; and
(11) Making notifications to other local and state authorities.

State of Wyoming

In accordance with Title 19, Chapter 13, *The Wyoming Emergency Management Act*, the Governor, in performing his duties may *make, amend and rescind the necessary orders, rules and regulations to carry out this act within the limits of the authority conferred upon him herein, with due consideration of the plans of the federal government.*[1]

As such, the Governor has created the State Emergency Response Commission (Executive Order 2001-6) [2] and has also assigned the duties of the Governor's Nuclear Waste Working Group to the SERC. The Governor has also directed the SERC to address radiological transportation issues by taking the following actions:

a) Develop, adopt, and maintain a radiological materials transportation emergency response plan;

b) Report the State's resources and needs to the Governor, recommend legislation to the Governor, and review appropriations generated from the radiological materials transportation emergency response fee, and

c) Prepare and maintain follow-up incident reports, records, and documentation for any transportation of radiological materials.

Executive Order 2001-6 also creates a Radiological Response Team which shall consist of representatives from the following agencies:

Office of Homeland Security
Department of Environmental
Quality Department of Health
University of Wyoming Environmental Health and Safety Office
Department of Transportation (Wyoming Highway Patrol Division)
Department of Transportation (Construction and Maintenance Division)

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[1] For additional information on the Powers of the Governor under this act, please refer to the Radiological Services Program Resource Binder, Section A.

[2] For additional information on the Governor's Executive Order 2001-6, please refer to the Radiological Services Program Resource Binder, Section B.

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Concept of Operations

A. Incident Management

1. Crisis Management

   Crisis management focuses on causes and involves activities to address the threat or occurrence of an incident. This is especially applicable to terrorist incidents. It is predominantly a law enforcement function that includes measures to anticipate, prevent and/or resolve a threat or act of terrorism or other actions initiated by humans. The Lead Federal Agency (LFA) for crisis management is the FBI. This guide is not intended to provide instructions on crisis management issues associated with radioactive materials. It is however, a source of information on consequence management associated with radioactive materials incidents which may be used by those involved with the crisis management of an incident.

2. Consequence Management

   Consequence management addresses the effects of an incident on lives and property. It includes measures to protect public health and safety, restore essential government services, and provide emergency relief to governments, businesses, and individuals affected by an incident. The Lead Federal Agency for consequence management is FEMA. This guide is developed to provide information and instructions to address consequence management for an incident involving radioactive materials, whether in transportation, fixed facility, or terrorism.

B. Incident Type and Classification

1. Incident Type

   For the purpose of this guide, there are three types of incidents involving radioactive materials. They are:

   a. Transportation Incident - an incident which occurs in association with any activity involving the movement of radioactive materials by a motorized conveyance on roadways, to include trucks, trains, plains, automobiles, etc. This does not include movement of materials at a facility by forklift, hand-truck or other transfer method. Such an incident would be considered a fixed

facility incident.

b. Fixed Facility Incident - an incident which occurs in association with any activity involving radioactive materials at a fixed location. This would include industrial sites (uranium processing), temporary work sites (oil well injections, non- destructive testing of welds, etc.), manufacturing sites (thickness gauges, etc.), or any other location which does not involve the movement of radioactive materials by a motorized conveyance on roadways as described in #1 above.

c. Terrorism Incident - an incident which occurs in association with any deliberate act of sabotage or destruction which includes the use of radioactive materials. This type of incident may include transportation or fixed facility, but due to the initiating event, will require coordination of response actions to insure crime scene issues are considered.

2. Incident Classification

There are also three classifications for incidents involving radioactive materials. They apply to each type of incident described above and are as follows:

a. Level I - an incident in which no release of radioactive material has occurred. This is determined by visual assessment of the incident scene. If there is not a high confidence level by the response personnel in declaring a Level I incident, it should default to a Level II incident.

b. Level II - an incident in which there may be a release of radioactive materials. This is determined by visual assessment of the incident scene. Level II would be declared when there is reasonable doubt to the integrity of the containment of the radioactive materials (package shows significant damaged, but there is no visible sign of material release).

c. Level III - an incident in which there is a release of radioactive materials. This is determined by visual assessment of the incident scene. There is a high level of confidence by the response personnel in declaring a Level III incident.

C. Incident Response Phases

1. Phase I - The “ATIONS” (pronounced a-shuns)
This phase includes Notification, Classification and Activation, the “ATIONS”.

a. Notification - This component of Phase I begins when the initial call is received by public safety officials. If first responders determine there is a radiological aspect to the incident, or that information is supplied during the initial call, a request for assistance can/is made through the Wyoming Highway Patrol Dispatch Center. The dispatch center will call the Wyoming Office of Homeland Security (during normal work hours) or page the WOHS

Duty Officer and supply whatever information may be available. The WOHS Duty Officer or staff person who received the call will initiate the notification procedures contained in the WOHS Duty Officer Manual.

b. Classification - The on-scene responder shall initiate the classification of the incident based on their assessment of the scene. If a notification has been made to the WOHS Radiological Services (RadSvc) Program, personnel from that program will make contact with appropriate personnel at the scene to determine the status of the incident and obtain additional information if possible. If the information provided indicates a need to change the classification, the Radiological Services personnel and the on-scene personnel (preferably the Incident Commander) will make that change cooperatively.

c. Activation - If assistance beyond verbal information is requested or determined necessary, RadSvc personnel will load out applicable equipment and supplies and respond to the incident scene. If it is determined that additional personnel or specialties (environmental, health, etc.) are required to support the incident, those notifications will be made by RadSvc personnel at this time. The Incident Commander will be notified when RadSvc personnel depart for the incident and an estimated time of arrival (ETA). This same information will be requested from all other support personnel activated to support the response. Upon departure for the incident scene, the next phase of the response will begin.

2. Phase II - Response

This phase begins upon departure from the WOHS facility. While en route, additional information may be obtained from the scene or other resources, additional notifications made, and a review of operational options can be discussed.

Upon arrival at the incident scene, RadSvc personnel should provide proper identification to on-scene personnel and check-in with the logistics and/or the Incident Commander. The lead RadSvc person should request an update briefing by the I.C. to determine the current status of the situation, other hazards present and current action plan. The RadSvc person should provide a review of capabilities and recommendations for addressing the radiological aspect of the incident. The best option should then be chosen in a cooperative manner by all response personnel as appropriate.

Additional visual assessments and information gathering may be required prior to any entry into the incident scene. Appropriate level of personal protection with I.C. approval shall be utilized. Entry activities should be conducted in a timely manner. All information gathered and the resulting follow-up recommendations should be provided to the command personnel. All activities within the incident scene should be considered based on a risk-benefit outcome. Scene assessment should focus on determining impacts on the health of responders, victims, and the public and the potential for environmental insult. Further actions, such as

bioassays, evacuation/sheltering, and recovery requirements should be based on this assessment.

3. Phase III - Recovery

Recovery options should be presented to the command personnel and coordinated with recovery personnel (provided by shipper/carrier). If recovery capabilities of the shipper/carrier prove unacceptable to insure public well-being, RadSvc personnel may undertake appropriate options to insure the incident scene does not result in a negative public health impact. RadSvc and other support personnel [3] will also insure that site recovery is to pre-incident conditions.

Responsibilities (Primary and Support)

Primary: - Regional Response Teams/Wyoming Office of Homeland Security

Tasks - Activate WebEOC and provide reports to Governor and applicable personnel and agencies.

- Coordinate damage assessment.
- Support evacuation, shelter and re-entry activities.
- Coordinate area incident radiological monitoring activities.
- Coordinate communication support for field command post. At direction of governor coordinate and disseminate warnings.
- Evaluate and recommend protective actions for both the public and response personnel (in cooperation with Department of Health).
- Provide radiological monitoring support to include collection and maintenance of records for monitoring activities, work and public exposures, and decontamination data.
- Provide radiological monitoring equipment, to include survey instruments, dosimetry, diagnostic instruments, sampling supplies, and basic anti-contamination equipment (Personal Protective Equipment- PPE)

Support/Primary: - Department of Health

Tasks - Assist in evaluating health hazards present in an incident involving radioactive materials.

- Recommend levels of responses to be conducted by state and local jurisdiction authorities.
- Coordinate with appropriate federal agencies and personnel of other health organizations (other states, private organizations etc.)
- Commend proactive actions to be taken by the public.
- Coordinate protective action measures to be used for the food chain, to include criteria for deciding whether livestock (dairy and other) should be put on protected feed and water. This includes

implementation of protective measures with appropriate agricultural agencies.

Support: Department of Environmental Quality

Tasks - Provide technical assistance in analyzing immediate and long-term effects of pollution (air, soil, and water) caused by radioactive material release.

-Provide technical assistance and advice on disposal of radioactive debris/waste.

-Notify downstream users and recommend protective actions in the event of an incident affecting surface or ground water.

Support: - University of Wyoming Environmental and Safety Office

Tasks - In cooperation with Department of Health, evaluate and recommend protective actions for both the public and response personnel and level of response.

-Assist in evaluating health hazards present in an incident involving radioactive materials.

-Provide technical assistance and advice on disposal of radioactive debris/waste.

Support: - Wyoming Department of Transportation/Wyoming Highway Patrol

Tasks - Maintain order and public safety.

-Provide access/egress control of the incident area.

-Provide, if required, radiological surveys for public safety (primarily for large incidents or confirmed releases).

-Initial response operations (for transportation incidents) to include scene assessment, notifications, and rescue/medical actions, all within the scope of training and qualifications.

Support: - Wyoming Department of Transportation-Construction and Maintenance Division

Tasks - Provide manpower and equipment to support operations in the incident area.

-Support route control during operations/evacuations in the incident area.

-Organize and coordinate operations to address road closure due to the incident.

Attachment E

WDEQ Emergency Response Plan (May 2016)

STATE OF WYOMING

EMERGENCY RESPONSE PLAN

May 2016

READ THIS PAGE FIRST!

PURPOSE

The purpose of this plan is to provide guidance on the coordination of timely, effective response/notification activities by The Department of Environmental Quality (DEQ) to emergency response activities. Following the plan will improve coordination between DEQ and other state agencies as well as various divisions and offices within DEQ.

The DEQ will provide appropriate notification to other state, county, or local agencies/officials as the incident dictates.

IMPORTANT

In most cases, DEQ should contact the responsible party and determine if their response is in an efficient and timely manner. This communication will help dictate the type of response / notifications required by the DEQ.

STATE OF WYOMING
DEPARTMENT OF ENVIRONMENTAL QUALITY
Todd Parfitt, Director
Office (307) 777-7555

Cheyenne Office
200 West 17th Street
4th Floor
Cheyenne, WY 82002

Main Cheyenne Numbers
Administration (307) 777-7937
Abandoned Mine Lands (307) 777-6145
Air Quality Division (307) 777-7391
Industrial Siting Division (307) 777-7369
Land Quality Division (307) 777-7756
Solid & Hazardous Waste Division (307) 777-7752
Water Quality Division (307) 777-7781

Casper Office
152 North Durbin Street, Ste. 100
Casper, WY 82601

Main Casper Numbers
Abandoned Mine Lands (307) 473-3460
Air Quality Division (307) 473-3455
Solid & Hazardous Waste Division (307) 473-3450
Water Quality Division (307) 473-3465

Sheridan Office
2100 West 5th Street
Sheridan, WY 82801

Main Sheridan Numbers
Air, Land & Water Quality Division (307) 673-9337

Lander Office
510 Meadowview Drive
Lander, WY 82520

Main Lander Numbers
Abandoned Mine Lands (307) 332-5085
Air Quality Division (307) 332-6755
Land Quality Division (307) 332-3047
Solid Waste Management (307) 332-6924
Water Quality Division (307) 332-3144

24 Hour Number
(307) 777- 7781

IN CASE OF EMERGENCY

Human Health or Safety Issue?
Reporting Contacts for Human Health or Safety Issue?
Action Required for Human Health or Safety Issue?
Action Options for Human Health?
Water Entry or Threat & Reportable?
Reporting Contacts for the Responsible Party
Impacted Waters?
Reporting Contacts for Impacted Waters
Impacted Soils?
Reporting Contacts for Impacted Soils
Other Environmental Issues?
Reporting Contacts for Other Environmental
Oil or Hazardous Substance Release (Definition)
Waters of the State (Definition)

DEQ Response List	DEQ Response
DEQ Response List of Local Emergency Planning Committees	LEPC
List of County Emergency Management Coordinators	County Coordinators
DEQ, Water Quality Division Contacts	WQD
DEQ, Solid & Hazardous Waste Division Contacts	SHWD
DEQ, Air Quality Division Contacts	AQD
DEQ, Land Quality Division Contacts	LQD
Regional Emergency Response Teams	RRT

HUMAN HEALTH OR SAFETY ISSUES

If yes is the answer to any of the following questions, then the appropriate contacts listed on the following pages should be notified. Also, it may be appropriate to notify the Local Emergency Planning Committee under tab LEPC and/or the County Emergency Management Coordinator under tab County Coordinator.

1) Does the release present either an acute or chronic chemical exposure to humans?

   Exposure includes, but is not limited to, inhalation, skin absorption, and ingestion.

2) Does the release create a fire or explosion potential?

   Potential causes of fires/explosions are chemical reactions, ignition of flammable or explosive chemicals or vapors, ignition of materials due to oxygen enrichment, agitation of shock or friction sensitive compounds, and sudden releases of materials under pressure.

3) Does an oxygen deficient environment exist as a result of the release?

   Oxygen deficiency can result from the displacement of oxygen by another gas or the consumption of oxygen by a chemical reaction.

4) Does the release of the product involve radiation emission to the environment? (Contact the Wyoming Highway Patrol Dispatcher (307-777-4321)

5) Does the release present any biological hazards?

   Waste from hospital or research facilities may contain disease causing organisms that can infect humans by inhalation of the surrounding air or ingestion of contaminated water.

6) Does the release present safety hazards?

   Safety hazards include objects that may fall, sharp objects, steep grades, slippery surfaces, uneven surfaces, unstable surfaces, exposed/downed power lines, impaired vision, excessive heat, excessive cold, excessive noise.

REPORTING CONTACTS FOR HUMAN HEALTH OR SAFETY ISSUES

LOCAL GOVERNMENT

Fire/Police/Sheriff Departments: 911

See list of Local Emergency Planning Committees under tab LEPC and notify appropriate county.

See list of County Emergency Management Coordinators under tab County Coordinators and notify appropriate county.

STATE GOVERNMENT

Department of Environmental Quality: (307) 777-7781 (24 hour number)

Highway Patrol/Department of Transportation: 1-800-442-9090

Wyoming Highway Patrol Dispatcher (for radiological releases): (307) 777-4321

Wyoming Department of Homeland Security: (307) 777-4900

Health Department: (307) 777-7656

OSHA: (307) 777-7786

FEDERAL GOVERNMENT

National Response Center: 1-800-424-8802

USEPA Region VIII: (303) 293-1788

The Poison Center: 1-800-955-9119

ACTION REQUIRED FOR HUMAN HEALTH & SAFETY ISSUES?

If yes is the answer to any of the questions below, then go to the options for human health page.

1) Is the release site readily accessible by people other than first responders?

2) Is the release a threat to people located downwind of the spill site?

3) Is the release a threat to enter a surface water or groundwater drinking water source?

ACTION OPTIONS FOR HUMAN HEALTH

The responsible party and local/state officials may choose more than one option listed below to address human health and safety issues resulting from a release event. There may be site specific options as well that are not represented here.

1) Provide a detour corridor away from release site and surrounding area as appropriate.

2) Secure release site and surrounding area as appropriate to prevent human exposure.

3) Evacuate people from the release site and surrounding area as appropriate.

4) Provide public notice regarding the release event and detail precautions required.

5) Provide alternate drinking water supplies.

6) Provide alternate housing for affected people.

7) Provide medical attention to any suspected exposed or impacted individuals.

8) Close public facilities.

9) Notify appropriate County Emergency Management Coordinators and/or appropriate DEQ, Water Quality Division Supervisors. These individuals can identify downstream water users.

Notify appropriate downstream water users by contacting the local Sheriff's Department. They will be able to contact the appropriate Water Superintendent or assist you in contacting the correct individuals.

WATER ENTRY OR THREAT AND REPORTABLE

Pursuant to Chapter 4 of the WWQRR the following releases are reportable to DEQ:

1) Releases of "oil" and "hazardous substances" that enter waters of the state.

2) Releases that are determined to be a threat to enter waters of the state and are:

   a) considered a "hazardous substance", or

   b) an amount greater than either 10 barrels of any combination of crude oil/petroleum condensate/produced water or 25 gallons of refined crude oil products (such as, gasoline, diesel motor fuel, aviation fuel, asphalt, road oil, kerosene, fuel oil, and derivatives of mineral, animal, or vegetable oils).

Please note that non-reportable spill events are still required to be addressed immediately by containing, removing and disposing of the released product according to DEQ regulations.

REPORTING CONTACTS FOR THE RESPONSIBLE PARTY

DEQ: (307) 777-7781

National Response Center: 1-800-424-8802

US EPA Region VIII: (303) 293-1788

*The above contacts should be made by the responsible party.

*Spills can also be reported via the web at http://deq.state.wy.us

IMPACTED WATERS?

If yes is the answer to any of the questions below then go to the impacted waters page.

1) Is the water visually impacted (sheen, turbid)?

2) Does the water have an odor or off-taste?

3) Do laboratory test results indicate impact?

4) Are there impaired/dead aquatic life, wildlife or livestock present in the spill area?

5) Is it a large spill that could threaten waters of the state and/or the environment?

Please note that waters include both surface and ground waters.

REPORTING CONTACTS FOR IMPACTED WATERS

DEQ: (307) 777-7781

Impacted Groundwater: (307) 777-7752

Impacted Surface Water: (307) 777-7781

For after hours, contact should be made to the appropriate Water Quality Division district supervisors listed under tab **WQD**.

Please note that when surface waters are impacted contact should also be made to:

Wyoming Game and Fish Department
Habitat Protection

Mark Fowdem, Program Coordinator	(307) 777-4559 (office) (307) 421-9727 (cell)
Rick Huber, Staff Aquatic Biologist	(307) 777-4558 (office) (307) 632-0152 (home)

The following neighboring state agencies should be immediately notified if an oil or hazardous substance release enters, or threatens to enter, their waters:

Montana Department of Environmental Quality
1520 East 6th Avenue
Helena, MT 59602
(406) 841-3911
(406) 431-0411

South Dakota Department of Water & Natural Resources, Joe Foss Building
Pierre, SD 57501
Kim McIntosh (605) 773-3296 (working hours)
Emergency Management (605) 773-3231 (after hours)

Nebraska Department of Environmental Quality
1200 N. Street
Lincoln, NE 68509
(402) 471-4545

Colorado Department of Public Health& Environment
Emergency Management Program
8100 Lowry Blvd.
Denver, CO 80220
(877) 518-5608 (24 hour number)

Utah Department of Environmental Quality
1469 West 288 North
PO Box 144870
Salt Lake City, UT 84114-4870
(801) 536-4123

Idaho Department of Environmental Quality
1410 North Hilton
Boise, ID 83706
(208) 373-0502 (working hours)
or
Emergency Response Commission
Bill Bishop (208) 334-3263
(208) 334-4570 (24 hour number)

IMPACTED SOILS?

If yes is the answer to any of the questions listed below then go to the impacted soils page.

1) Is the soil visually impacted (stained, impaired/dead vegetation)?

2) Does the soil have an odor as a result of the release?

3) Do laboratory test results indicate contamination?

4) Is there a loss of use of the land?

5) Can the soil be characterized as hazardous waste?

6) Are there contaminant concerns (threats to surface water or ground water from infiltration)?

REPORTING CONTACTS FOR IMPACTED SOILS

Solid and Hazardous Waste Division:	(307) 777-7752 SHWD
Land Quality Division (if the spill involves a mine)	(307) 777-7046 LQD
Water Quality Division:	(307)777-7781 WQD

For spills involving the oil and gas producing facilities contact:

Wyoming Oil & Gas Commission:	(307) 234-7147

For spills on or near public lands contact:

Bureau of Land Management:

Cheyenne

Marty Griffith	(307) 775-6093	
General Number	(307) 775-6256	

Rock Springs

Don Judice, Petroleum Engineer,	352-0346	382-2188 (home)
George Schoenfield, Surface Prot & Hazmat	352-0271	382-6159 (home)
Matt Baker, PET & Hazmat	352-0237	382-3393 (home)

Kemmerer

John Pecor, Petroleum Engineer	828-4510	789-4030 (home)
Wally Mierzejewski, Surgace Prot & Hazmat	828-4508	

Pinedale

Greg Noble, Petroleum Engineer	367-5314	367-6419 (home)
Tom Curry, Surface Protection	367-5312	367-6877 (home)
John James, PET & Hazmat	367-6578	367-6578 (home)

OTHER ENVIRONMENTAL ISSUES?

If yes is the answer to any of the questions below go to the other environmental issues page.

1) Has indoor/outside air quality been impacted?

2) Have aquatic life, wildlife or livestock been impacted or may be impacted?

3) Have trees or vegetation been impaired/dead or may be?

4) Have solid/hazardous wastes related to the release been generated or may be?

5) Will regulatory permitting be necessary for containment, treatment, disposal?

REPORTING CONTACTS FOR OTHER ENVIRONMENTAL ISSUES

Solid and Hazardous Waste Division:	(307) 777-7752 SHWD
Air Quality Division:	(307) 777-7391 AQD
Land Quality Division (if the spill involves a mine)	(307) 777-7756 LQD
United States Fish & Wildlife Service:	(307) 772-2374
Wyoming Game & Fish Department:	(307) 777-4600
Wyoming Oil & Gas Commission:	(307) 234-7147
Bureau of Land Management:	(307) 775-6256
Wyoming Department of Transportation:	(307) 777-4484

OIL OR HAZARDOUS SUBSTANCE RELEASE

Chapter 4 of the Wyoming Water Quality Rules and Regulations (WWQRR) regulates the containment, cleanup and disposal of oil or hazardous substances released to waters of the state, or which threaten to enter waters of the state.

A “release” is defined as, but not limited to, any sudden spilling, leaking, pumping, pouring, emptying, emitting, discharging, dumping, addition of, escaping, leaching or unauthorized disposal of any oil or hazardous substance which enters or threatens to enter waters of the state. Intentional discharges of oil or hazardous substances are regulated by NPDES permits.

“Oil” means insoluble or partially soluble oil of any kind including, but not limited to, crude or fuel oil, lubricating oil, oily sludge, asphalt, crude oil condensate, gasoline, aviation fuel, kerosene, diesel motor fuels, road oil, waste oil, oil mixed with federally defined non-hazardous wastes and derivatives of mineral, animal or vegetable oils.

“Hazardous substance” means any substance or waste, which after release, constitutes a threat to public health or welfare, or other aquatic life or wildlife because of its quantity, concentration, chemical, corrosive, flammable, reactive, toxic, infectious, or radioactive characteristics. The term also includes all substances so designated by the EPA. The term does not include oil.

The Wyoming Environmental Quality Act and Industrial Development Information and Siting Act defines “Waters of the State” as:

“Waters of the State” means all surface and groundwater, including waters associated with wetlands, within Wyoming.

Appendix B to Subsection 4.7 Event Reporting Manual

Uranium Recovery Program

Department of Environmental Quality

WYOMING

Event Reporting Procedural Manual

Uranium Recovery Program

Department of Environmental Quality

WYOMING

August 2017

Table of Contents

1.0 Introduction

The Wyoming Uranium Recovery Program (URP) has established procedures for reporting radiological material events from within the State to the U.S. Nuclear Regulatory Commission (NRC) via the Nuclear Material Events Database (NMED). The procedures which follow are based upon the following NRC references and resources:

1. NRC Criteria Policy Statement, Criteria 1 and 11 (January 23, 1981);
2. Office of Nuclear Material Safety and Safeguards (NMSS) Procedure SA-300, *Reporting Material Events* (March 27, 2013), and Appendix-*Handbook on Nuclear Material Event Reporting in the Agreement States*, Final Report (March 2013); and
3. NMED database, located at http://nmed.inl.gov.

The procedures which follow include the following:

1. Reporting events requiring notification within 24 hours to the NRC Operations Center;
2. Providing 5 - 60 day notification and follow-up event information;
3. Schedule for event reporting;
4. Reporting formats; and
5. Providing event information for events meeting the abnormal occurrence (AO) criteria.

1.1 Why do we collect event information?

Operating experience is an essential element in the regulatory process for ensuring that licensed activities are conducted safely. The reporting and analysis of incidents and events helps to identify deficiencies in the safe use of Atomic Energy Act (AEA) nuclear material and to help ensure that corrective actions are taken to prevent recurrence. A 1993 General Accounting Office (GAO) report identified the compilation and presentation of national materials data as an area for improvement and recommended that NRC take appropriate action to ensure that the information on radiation events is reported completely and accurately. Further, reliable information should be available to NRC, the Congress, and the States to identify patterns and trends and determine appropriate changes for the programs. Event information is reported to Congress annually and this information is used to demonstrate that the NRC and the Agreement States are meeting the safety and security goals and the corresponding strategic outcomes in the NRC's strategic plan. NRC conducts reviews of all operating experience reports, from both NRC licensees and Agreement States, to identify safety concerns early, and to further evaluate individual events for the possible presence of generic safety concerns or generic issues that could apply to a broader class of licensees. Prompt reporting of event information, including 5-60 day report information, and updates to events, helps the staff identify or detect possible safety concerns or issues as early as possible. An event or condition could by itself appear insignificant, but when compared with national information, could indicate a generic concern or issue. In-depth analysis of event report data may result in the identification of actions that could lead to

improvements in the effectiveness of NRC and Agreement State regulatory programs. Event analysis may also result in the issuance of generic communications to provide information and guidance regarding safety concerns and issues.

NRC provides a quarterly and annual report that presents information on the results of statistical analysis of event data and any safety significant or generic issues or concerns. This information is published in the NMED Quarterly and Annual Reports, which are available in electronic form at the NMED Website (http://nmed.inl.gov). Also, the NRC Office of Nuclear Material Safety and Safeguards (NMSS) publishes a quarterly licensee newsletter (NUREG/BR-0117) that includes information on nuclear material safety concerns.

1.2 What is the governing regulatory authority?

Under Section 274 of the AEA, Wyoming has assumed regulatory authority over source material involved in uranium or thorium recovery or milling and the associated 11e.(2) byproduct material. The AEA directs NRC to cooperate with the States in the formulation of standards to protect employees or the general public against hazards of radiation and to assure that State and Commission programs will be coordinated and compatible. Article VI of the Agreement between the State and the NRC states that "the State and the Commission agree to keep each other informed of events, accidents, and licensee performance that may have generic implications or otherwise be of regulatory interest."

Under the AEA and the Energy Reorganization Act of 1974 (ERA), as amended, the NRC evaluates material event reports for both NRC and Agreement State licensees, and AOs that have occurred in licensed facilities. In addition, the ERA requires NRC to provide to Congress on an annual basis, information on events that meet the AO criteria.

Under the Government Performance Results Act of 1994 (GPRA), Federal agencies are required to establish measurable, outcome-oriented performance goals linked to Agency programs and activities in a strategic plan. An annual performance report to Congress is prepared that evaluates the NRC nuclear materials program against the metric performance goals. The metric goals are based on current and historical event reporting data. Due to the importance of nationwide operating experience as an essential element in the regulatory process for ensuring that licensed activities are conducted safely, the Commission directed the staff to make Agreement State reporting of events to NRC an item of compatibility (See Reference section, June 30, 1997, Staff Requirements Memorandum).

The guidance contained in this manual is provided to assist URP staff in the joint sharing and analysis of event information. The AEA directs the Commission to periodically review actions taken by the States under the Agreements to ensure adequacy and compatibility with the provisions of the Act. NRC conducts periodic evaluations of Agreement State programs under the *Integrated Materials Performance Evaluation Program (IMPEP*), which includes an evaluation of event response, reporting, follow-up, and close- out. (See NMSS Procedures SA-100,

Implementation of the Integrated Performance Evaluation Program (IMPEP) and SA-105, *Reviewing the Common Performance Indicator, Technical Quality of Incident and Allegation Activities*.

1.3 How do you determine if an event is reportable?

Agreement States shall report to NRC all events reported to them in accordance with their State regulations that are compatible to NRC's reporting requirements. Section 2 of this document provides additional details regarding reporting events. Attachment A of this manual contains a listing of the most commonly encountered NRC regulatory reporting requirements for nuclear material events. The reporting requirements in Title 10 of the U.S. Code of Federal Regulations (C.F.R) form the basis for the compatible reporting requirements in Agreement State regulations. The table in Attachment A provides the specific regulatory requirement, followed by a brief description of the types of events that fall under the reporting requirement, and the periodicity for reporting. It should be noted that the information in Attachment A is only to be used as a reference and does not contain all of the regulatory reporting requirements. You should consult the actual reporting requirements provided in NRC's regulations (10 C.F.R) to determine if an event is reportable. Attachment B provides examples of reportable nuclear material events or occurrences that are required to be reported by both NRC and Agreement State licensees.

The Agreement States are encouraged to voluntarily report an occurrence that the State believes might be of safety significance, generic interest or concern, or involves media interest (even if that occurrence is not able to be tracked to a specific reporting requirement). These can be occurrences that actually happened (event) or something that may happen (condition) that does not meet the regulatory reporting criteria. For voluntary reports of this type, the State should identify the situation and provide any explanation of the safety significance, generic interest or concern, or media interest generated.

1.4 What is the Nuclear Material Events Database (NMED)?

NMED contains a historical collection of information on the occurrence, description, and resolution of events involving the use of radioactive material in the United States. NMED accommodates the sharing of material event data submitted by Agreement States and the NRC. The data includes information on material events from January 1990 through the present. The Agreement States will be notified of changes made to NMED. The database is maintained by NMSS through a contractor. NMED is a tool available to both NRC and the Agreement States to support evaluation of specific events, as well as assessment of event types, and identification of generic issues and concerns. NRC performs event assessments on a quarterly and annual basis, and these assessments can be found on the NMED website. To gain access to the NMED website, contact the NRC NMED Project Manager at NMEDNRC@nrc.gov. Also, Agreement States are encouraged to share with NRC and the other Agreement States any assessments or trending studies they have performed. These assessments or studies can be forwarded to

the NRC NMED Project Manager for posting on the NMED website, or distributed as an all Agreement State Letter.

2.0 Reporting Material Events

In accordance with the provisions of compatible Agreement State regulations, Agreement State licensees are required to report the occurrence of material incidents and events to the Agreement State regulatory agency. As an item of compatibility, the Agreement States provide reports of incidents and events involving the use of nuclear materials by Agreement State licensees to NRC. This section presents information on reporting (1) immediate or 24-hour reportable events, (2) 5 - 60 day reportable events, and (3) follow-up event information. As a general rule, Agreement States must report events to NRC on the same timeframe that licensees must report to the Agreement State. For example, if a report is due from the licensee to the Agreement State in 24 hours, the Agreement State report is due to the NRC within 24 hours of receiving the event notification/report from the licensee or non-licensee. Attachment A of this manual contains a table of the most encountered NRC event reporting requirements, and Attachment C contains a summary of the event reporting schedule.

2.1 Reporting Events Requiring Notification Within 24 Hours

Agreement States shall report events requiring notification within 24 hours to the NRC Operations Center's Headquarters Operations Officer (HOO). Information should be initially reported to the HOO by telephone at (301) 816-5100. Follow-up information for the event may also be provided to the HOO by fax at (301) 816-5151 or by e-mail at HOO.HOC@nrc.gov. An example of a fax page has been included in Attachment D of this manual. Agreement States should assign and provide an Event Report Identification Number for each reported event. The format for this number is described in Section 2.3.a. ***"Assign Event Report Identification Number."*** Attachment E provides a listing of minimum event information that should be provided to complete an event report. When submitting an initial event report, please provide as much information as is known at the time the report is prepared regarding the items indicated in Attachment E. However, it is understood that this information may be incomplete or preliminary. Updated information should be subsequently provided in follow-up reports (see Section 2.4).

2.2 NMED Record for Events Reported Within 24 Hours

The NMED contractor uses the initial event notification (EN) information, which was provided to the NRC Operations Center from an Agreement State, to establish a record in the national NMED database. The NMED contractor will reference the Agreement State Event Report Identification Number (See Section 2.3.a for generating an Agreement State Event Report Identification Number) in the record. The Agreement State Event Report Identification Number will be reflected in the "Reference" field of the NMED record and will be used to ensure any subsequent updates are correctly associated with the initial event record (See Section 2.4 of this manual for guidance on

reporting follow-up event information to NMED). In addition, each event entered into NMED is assigned a unique NMED item number.

2.3 5 – 60 Day Event Reporting

Agreement States shall report events that require reporting within 5 to 60 days to the NRC. These reports may be provided in writing by mail or electronically. NRC staff encourages Agreement States to electronically report these events using the local NMED Agreement State software or the document "Upload" program on the NMED website. However, if the Agreement State prefers to send the event report via mail, then the report should be mailed to NRC's Radioactive Materials Safety Branch (RMSB) (See Attachment C for mailing address).

The following paragraphs provide additional information on reporting events. For guidance on data entry, an electronic copy of the NMED users guide has been included in the local NMED Agreement State software.

a. Assign Event Report Identification Number

   The Agreement State event report identification number should appear on all event reports, including preliminary, initial notification reports (e.g., ENs), and any follow-up reports. The event report identification number should consist of the two letter State agency ID, two digit year corresponding to the reporting year, and a sequentially assigned four digit ID number. The event report identification number should be referenced by the Agreement State for all telephone, electronic or written notifications involving each specific event.

b. Basic Event Information

   Attachment E of this manual provides a listing of the minimum event information that should be provided. When submitting an initial event report, please provide as much information as is known at the time the report is prepared regarding the items indicated in the Attachment. It is understood that this initial information may be incomplete or preliminary. Updated information should be subsequently provided in follow-up reports (see Section 2.4).

c. Electronic Reporting to NMED

   Agreement States may provide an electronic NMED report to the NMED contractor by using the local NMED Agreement State software, which may be downloaded from the NMED website, or by using the document "Upload" function on the NMED website. If you need additional help, you may contact the NMED contractor or the NRC NMED Project Manager. For contact via telephone, e-mail or mail, refer to the contact information on the NMED website.

d. Access to NMED

   A search of the nationally collected data is available on the NMED website with several drop-down, point-and-click menus available. Access to the NMED is controlled through the NRC NMED Project Manager. If access is required,

contact the NRC NMED Project Manager by e-mail at NMEDNRC@nrc.gov. Access to NMED is only provided to NRC, Agreement States, other federal government agencies, and/or federal government contractors who have the need to use the event information in NMED.

e. Written Event Reports

Written event reports should be sent to the Branch Chief, RMSB, at the address listed in Attachment C. Reports should be provided in an optical character recognition (OCR) format. Please include an event report cover page for all written event information provided to NRC. Use of an event report cover page helps ensure our document control staff can readily identify, classify and appropriately record the document. A sample event report cover page is provided in Attachment F of this manual.
Also, the Agreement States should refrain from providing information that is considered sensitive (e.g., personal privacy, proprietary, and/or security related information (e.g., sensitive unclassified non-safeguards information (SUNSI)). If such information is required to describe the event, the Agreement State should provide a bracketed copy of the information that identifies the information that should be protected and a redacted copy of the information that deletes such information.

2.4 Reporting Follow-up Event Information

Follow-up information for nuclear material event reports (e.g., providing additional information regarding initial event reports) should provide the results of investigations as to what, where, when and how the event or conditions occurred. Agreement States should provide the items below when reporting follow-up information:

a. On a monthly basis, follow-up reports through the closeout of the event should be provided in writing to the RMSB Branch Chief at the address listed in Attachment C of this manual or electronically to the NMED contractor via the NMED website or the NMED local Agreement State software. A complete event report should include all investigative information obtained through closeout of the event.

b. When providing follow-up event information, provide the document(s) or clear reference to documents on file that the Agreement State used to generate the NMED event report (e.g., a licensee inspection report dated mm/dd/yy), if applicable and appropriate.

c. Any follow-up event information that revises earlier information or provides additional information on a given event should be provided to ensure a complete historical record.

2.5 Radiological Emergency Response Assistance Available to the States

Agreement States may request radiological emergency response assistance by contacting the NRC's Operations Center. The Federal government, upon request, has the capability to provide assistance to States in responding to radiological emergencies. Under the National Response Framework, NRC is the coordinating agency for domestic incident management for incidents involving nuclear materials or facilities licensed by the NRC or Agreement States. As the coordinating agency, NRC may request assistance from other agencies, (e.g., Department of Homeland Security, Department of Energy, etc.) which could also include the Agreement States. Federal assistance could include ground and aerial radiological monitoring (e.g., missing source), medical advice on radiation effects and treatment, consequence projection, and protective action assessment.

2.6 International Nuclear Event Scale Reporting

Since 2004, the NRC and the Agreement States have shared event information with the international community for the rating and reporting of nuclear, transportation and radiation source events, using the International Atomic Energy Agency (IAEA) International Nuclear Event Scale (INES). INES is a scale that is used for rating safety significance of events associated with the use of nuclear or radioactive materials.

INES events involve those which are regulated by NRC or the Agreement States, and are eligible for rating. The NRC does not require the States to classify events or to provide direct notifications to IAEA using the INES scale. The NRC will use information provided by the States during their initial reporting and updates of the event for classifying the event and notifying IAEA. The NRC has committed to transmit to the IAEA an INES-based rating for an applicable event that is rated at an INES Level 2 or higher. The NRC will notify the IAEA within 2 business days when it has been determined that an event has a provisional or final INES rating of Level 2 or higher. For events that occur in an Agreement State, the NRC Regional State Agreement Officer (RSAO) will provide the State with the draft INES event report within 24 hours of its generation. The States are asked to concur that the information in the report is factual. If the State cannot review the draft INES event report in time to meet the two business day reporting deadline, NRC will provide the report to INES, and mark the event Provisional.

For further information on INES reporting procedures and rating criteria, please see NRC Management Directive 5.12, "International Nuclear Event Scale Participation," which may be found at http://www.nrc.gov/reading-rm/doc-collections/management-directives/volumes/vol- 5.html.

2.7 Voluntary Reporting of Lost, Stolen and Abandoned Sources

Although NMED typically contains only events involving AEA material, the NMED database was expanded in 1998 to include voluntary reports of non-AEA orphan discrete sources (sources that are found, but the owner could not be identified), and expanded

again in 2002 to capture voluntary reports of lost or stolen non-AEA discrete sources. This was done at the request of CRCPD to support their national effort to track lost, stolen and recovered radioactive material of all types (including non-AEA and unlicensed material) found in both Agreement and non-Agreement States. (Note that in 2007, the definition of byproduct material under the AEA was expanded to include some of this material that had been "non-AEA.") The reportable as well as voluntary data on lost, stolen, and abandoned sources will be collected from Agreement and non-Agreement States, and in some cases non-licensee organizations and members of the public. Agreement and Non-Agreement States should follow the guidance provided above in Section 2.3 "5 – 60 Day Event Reporting" to report any lost, stolen and abandoned non-AEA and unlicensed material.

2.8 Reporting Theft or Terrorist Activity

The U.S. Federal Bureau of Investigation (FBI) notification should be considered if an event involves the possibility of *theft or terrorist activities*. Agreement States shall promptly notify the NRC Operations Center (i.e., the HOO) after contacting the appropriate Local Law Enforcement Agency (LLEA) and/or the FBI in cases involving actual or attempted theft, sabotage, or diversion of radioactive material containing quantities greater than or equal to the quantities of concern of radioactive material as indicated in Attachment G of this manual. Agreement State Regulatory Agencies should consider notifying the FBI or LLEA in all cases of actual theft, sabotage, diversions and possible terrorism of radioactive material, regardless of the quantity of radioactive material involved. This includes intentional use of radioactive materials that could be used in an unauthorized malevolent manner that could lead to serious consequences. Agreement States should coordinate with the NRC their communications with other local, Federal and State Agencies, to ensure that shared information is accurate and consistent. Based on health and safety significance the issuance of a press release should also be considered. (See All Agreement State Letter SP- 98 -038, dated May 5, 1998, regarding expansion of the FBI criminal investigative jurisdiction to include byproduct material. A revision to the U.S. Code assigns lead responsibility for material events involving ***theft or terrorist activities*** to the FBI.) If it is not clear whether an event should be categorized as a possible theft or terrorist activity, the Agreement State should contact the NRC Headquarters Operations Center for assistance in determining if the event should be reported.

3.0 Closing and Completing Events

3.1 Events Closed in NMED

At the request of the Agreement States, a field was added to the NMED web site to enable a search for records that have been closed by the applicable regulatory agency under "Event Closed by Region/State." Agreement States should notify the NMED contractor when the event record has been officially closed (i.e., no further follow-up planned and/or no additional information expected). The State should ensure that the record contains all pertinent technical information, including follow-up information

before closing the record.

3.2 Record Complete in NMED

A "complete record" refers to an NMED record that contains a specified minimum set of information. This minimum set of information is defined in Attachment E and may also be found on the NMED website under "Help." Once the minimum information is provided, the NRC/NMED contractor marks the NMED record as "complete." It should be noted that a "complete" record still remains open in NMED until the State has indicated the record should be closed.

4.0 NRC Publication and Distribution of Event Notifications

4.1 Event Notifications (ENs)

All events that are required to be reported to the NRC Operations Center are currently entered into the NRC Event Notification database. Most ENs are publicly available on NRC's public website at http://www.nrc.gov/reading-rm/doc-collections/, under "Events, Reports", within five business days of notification. As a result of public access to this information, Agreement States may be contacted by the public or media regarding events. Typically, the NRC will withhold Agreement State reports from public release for at least three business days.

4.2 Preliminary Notifications (PNs)

Preliminary Notifications (PNs) are brief summary reports issued and prepared by the NRC staff to notify the Commission of the occurrence of a significant event. PNs are based on information provided by the Agreement State radiation control program staff. PNs are usually issued within the same business day of the notification (or the next business day if the event is reported after hours or on the weekend). PNs will be available on NRC's public website under "Events, Reports" at http://www.nrc.gov/reading-rm/doc -collections/ . Updates to PNs occur when significant additional information about an event is provided to NRC. When preparing PNs, NRC staff will generally contact the Agreement State.

5.0 NRC Safety Reviews of Material Event Reports

5.1 NRC Review of Material Events for Safety Significance and Generic Assessment

A review of all new and updated nuclear material ENs received by the NRC Operations Center is conducted by NRC staff. The objective of the review is to identify any events that may involve generic concerns or issues, or could have significant impact on public

health and safety, security, and/or the environment. Generic or significant events that warrant such a review include:

a. Multiple occurrences of an event tracked as performance measures in the Strategic Plan (e.g., medical events, overexposures, lost or stolen sources of concern), or

b. A single occurrence of an event tracked as a strategic goal in the Strategic Plan (e.g., deaths, loss of organ function, significant release to the environment), or

c. Events involving possible generic concerns or issues (e.g., equipment malfunctions, equipment failures, inadequate user procedures, software problems), or

d. Consequences or causal factors not previously seen in the event assessment process.

***Requests for additional information*:** Based on the results of the nuclear material event safety and generic assessment review, Agreement State staff may be contacted by the RSAO by phone or e-mail to discuss the event. Additional information may be requested to help determine the safety significance and any possible generic implications (e.g., equipment malfunction or failure, significant exposures). For significant events (i.e., immediate or 24 hour reportable events) such requests, normally initiated by the RSAO or NRC's Operation Center staff, would occur on an as needed basis, possibly within hours to a few days of notification of the occurrence.

For events not considered to be significant (i.e., not required to be reported within 24 hours), the standard procedure is to allow at least 30 days before making such requests to provide reasonable time for Agreement State review and evaluation, and submission of follow -up information. A request for follow- up information may also be sent routinely via e-mail by the NMED contractor, (e.g., when the NMED record is incomplete after 60 days from the date reported to the regulatory agency).

5.2 Actions NRC May Take after Review of "Significant" Events

Events identified as having a significant potential risk to public health and safety, security, and/or the environment may receive additional NRC management review. NRC headquarters and region staff continue to follow-up and review material events through closure of the event, which includes checking to see that the final report information has been entered into NMED. Based on potential risks identified as a result of event review and analyses, NRC may take actions to reduce potential risks by issuing safety-related notifications to licensees, (e.g., Information Notices (IN), concerning software problems, equipment modifications, etc.) Further research and analysis of events may also result in regulatory or programmatic changes.

6.0 Agreement State Safety Reviews of Material Event Reports

6.1 Agreement State Review of Material Events for Safety Significance and Generic Assessment

Agreement States should review events occurring within their jurisdiction, or related to products registered or licensed in their jurisdiction, to identify any events that may involve generic concerns or issues, or could have significant impact on public health and safety, security, and/or the environment. Generic or significant events that warrant such a review include:

a. Multiple occurrences of an event (e.g., medical events, overexposures, lost or stolen sources of concern), or

b. A single occurrence of a significant or serious event (e.g., deaths, loss of organ function, significant release to the environment), or

c. Events involving possible generic concerns or issues (e.g., equipment malfunctions, equipment failures, inadequate user procedures, software problems), or

d. Consequences or causal factors not previously seen in the event assessment process.

6.2 Actions Agreement States May Take after Review of Significant Events

Events identified as having a significant potential risk to public health and safety, security, and/or the environment may receive additional State or NRC management review. Agreement States should continue to follow-up and review material events through the closure of the event, which includes checking to see that the final report information has been entered into NMED. Based on potential risks identified as a result of event review and analyses, States may take actions to reduce potential risks by issuing safety-related notifications to licensees. States are encouraged to share with NRC and the other States any findings, assessments, or trending studies. These can be forwarded to the NMED Project Manager for posting on the NMED website or, distribution in the NMED newsletter and/or an NRC Agreement State Letter.

7.0 Abnormal Occurrence (AO) Guidelines and Criteria

7.1 Introduction

This section presents the guidelines and criteria to be followed when assessing the significance of an event or occurrence to see if it meets the criteria established to identify an abnormal occurrence (AO). Section 208 of the Energy Reorganization Act of

1974 (ERA) (Public Law 93-438, 42 USC 5848) identifies an AO as an unscheduled incident or event that the Commission determines to be significant from the standpoint of public health or safety. Section 208 of the Act also requires that the Commission inform Congress of any AOs. The Agreement States support the NRC in their effort to keep Congress apprised of any significant events that may directly affect public health or safety by providing information to the NRC on potential AOs that have occurred in their State. For more information on AO reporting please see NRC's Management Directive 8.1.

7.2 AO Policy Information

The Commission submits a report to Congress identifying any AOs. The Federal Reports Elimination and Sunset Act of 1995 require that AOs be reported to Congress on an annual basis. Section 208 of the ERA indicates that each report shall contain:

(1) The date and place of each occurrence;
(2) The nature and probable consequence of each occurrence;
(3) The cause or causes of each; and
(4) Any action taken to prevent recurrence.

As specified in Section 208 of the ERA, within 15 days of receiving information of each AO, the Commission shall widely disseminate AO information to the public.

An incident or event will be considered an AO if it involves a major reduction in the degree of protection of the public health or safety, security, and/or the environment. This type of incident or event would have a moderate or severe impact and could include, but need not be limited to the following:

(1) Moderate exposure to, or release of, radioactive material licensed by or otherwise regulated by the Commission or an Agreement State;
(2) Major degradation of essential safety-related equipment; or
(3) Major deficiencies in design, construction, use of, or management controls for facilities or radioactive material licensed by or otherwise regulated by the Commission or an Agreement State.

The NRC's annual "Report to Congress on Abnormal Occurrences" is published in NUREG-0090 and can be accessed at http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0090/.

The AO Report to Congress is also used to provide information on significant materials issues and on adverse licensee performance. In accordance with SECY-02-216, "Proposed Process for Providing Information on Significant Nuclear Materials Issues and Adverse License Performance" and SECY- 11-0132, "Revision of the Criteria for Identifying Nuclear Materials Licensees for Discussion at the Agency Action Review Meeting," Agreement State licensees will be considered, along with NRC nuclear

material licensees, for discussion during the Annual Agency Action Review Meeting (AARM). NRC's Management Directive and Handbook 8.14, "Agency Action Review Meeting," describes NMSS and the NRC Region's participation in the AARM and its role as the lead for the discussion on Agreement State licensees, as necessary.

7.3 AO Criteria

Agreement State staff should routinely screen events against the AO criteria as part of their routine program. Any events identified as potential AOs should be reported to NRC. Additionally, the Agreement States are expected to provide a draft special AO report (i.e., write-up) as described below. The NRC will assist the Agreement States in preparing the write-ups for potential AOs. The criteria used to determine if an event is an AO can be found in the most recent version of NUREG-0090, "Abnormal Occurrence Report to Congress" (see Appendix A) at http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0090/. Please note that if the AO criteria changes, the NRC will notify the Agreement States. Also, the Agreement States may contact their RSAO or the NRC NMED project manager to ensure they have the most current AO criteria.

7.4 Guidelines for AO Write-ups

AO write-ups should be complete, up-to-date, and written using text that is understandable to non- technical readers. Also, when preparing the AO write-up, the Agreement States should refrain from providing confidential, personal privacy, and/or security related information unless the information is required to describe the AO. If confidential, personal privacy, and/or security related information is included in the report, the report should be properly marked to indicate such information exists. The AO write-up should be formatted to include the following:

First paragraph - State the AO criteria for the event by citing the appropriate section of Appendix A of NUREG-0090, which contains all of the AO criteria.

Date and Place - Provide the date the event occurred, the licensee's name, and the city and State of the licensee.

Nature and Probable Consequences - Briefly explain the event and the circumstances surrounding the occurrence, and what were the consequences. Provide the specific details of the event to include the: exposure (where applicable), source, specific radionuclide(s), quantity, dose (where applicable), treatment plan (where applicable), equipment/devices with the manufacturer and model number. Describe any immediate actions taken by the licensee and the State (e.g., decontaminated the facility, evacuated the staff, special inspection performed, enforcement action(s) taken, etc.). The write-up should answer where, when, how, why, and efforts to prevent recurrence.

For occupational or public overexposures identify whether the person was notified.

For medical events, include the intended and actual treatment plan. For example, as applicable; state the prescribed dose and the actual delivered dose to the intended

treatment site; state any doses to unintended sites (include the dose and the site); state the prescribed radioisotope and/or radiopharmaceutical and the radioisotope/radiopharmaceutical actually administered; and describe the prescribed mode of treatment and the actual mode of treatment delivered. Indicate whether the patient and referring physician were notified of the event. Also, state the medical significance of the event to the patient (e.g., The licensee concluded that the medical event would not have a significant medical effect on the patient).

NOTE: NRC's NUREG publication policy states that all documents must be published in dual units (Metric and English).

Cause(s) - Describe what the causes of the event were determined or estimated to be, including any contributing factors leading up to the event.

Actions taken to prevent recurrence - Briefly explain what corrective actions (e.g., developed new procedures, hired more staff, etc.) were taken to prevent recurrence by the licensee. Also, the Agreement State should indicate the actions they took to prevent recurrence (e.g., any enforcement actions or penalties given to the licensee and/or individual(s)).

Last paragraph - If all the reporting requirements have been met for the AO event, then a statement such as "This event is closed for the purpose of this report" should be included in the last paragraph to indicate that the event has been closed. However, the AO will be kept open if there is a reasonable expectation that currently unavailable information will be obtained shortly. Also, if significant new information becomes available for a closed AO at a later date, the AO will be reopened, the new information will be reported under "Updates of Previously Reported Abnormal Occurrences" (NUREG-0090, Appendix B), and the AO will again be closed out.

For examples of AO write-ups see NRC's NUREG-0090 at http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0090/.

8.0 Communicating Radiological Material Events to the Appropriate Entities in Wyoming

- Events and allegations may be reported to the Uranium Recovery Program (URP) at 307-777-7756.

- For after-hours reporting of events and allegations, the URP may contacted via the Wyoming DEQ 24-hour spill response number: 307-777-7781. In addition to the spill response phone number, the WDEQ also has an online form available for reporting complaints, spills, or releases (http://spills.adm.apps.deq.wyoming.gov/), as well as a website devoted to Spills and Emergency Response (http://deq.wyoming.gov/admin/spills-and-emergency-response/). Information received via the online form or 24-hour phone number

will be forwarded by the WDEQ Spill Coordinator to the URP in a timely fashion.

- For major radiological events and allegations, the URP will coordinate with other State Agencies, the NRC (24-hour Headquarters Operations Center, 301-816-5100), and EPA (Region 8 National Response Center, 800-424-8802). Wyoming has a Radiological Response Team, a subdivision of the State Emergency Response Commission, which consists of the following entities:
    - Office of Homeland Security, Radiological Program,
      Mr. Scott Ramsay (307-777-4951)
    - Wyoming Department of Environmental Quality
      Mr. Joe Hunter, Spill Coordinator (307-777-7781)
    - Wyoming Department of Health (Public Health Emergency Line, 888-996-9104)
    - University of Wyoming Health and Safety Office (307-766-3277)
    - Wyoming Department of Transportation, Highway Patrol Division (307-777-4301)
    - Wyoming Department of Transportation, Construction and Maintenance Division (307-777-4375, after hours road hazard reporting 800-442-9090)

Attachment A

NRC Regulatory Reporting Requirements

NRC Regulatory Reporting Requirements

The following provides a listing of the most commonly encountered material reporting requirements for which Agreement States should have compatible regulations. This table does not contain all of NRC's regulatory reporting requirements. See NRC regulations for all reporting requirements.

Regulatory Requirement	Reporting Category		Brief Summary of Reporting Requirement	Notification
	Within 24 hours	5 - 60 Days		
10 CFR **Part 20**, Standards for Protection Against Radiation	20.1906(d)(1)		Reports of removable contamination on package > limits in 10 CFR 71.87.	Immediate
	20.1906(d)(2)		Radiation levels on package > limits in 10 CFR 71.47.	Immediate
	20.2201(a)(1)(i)		Reports of loss, stolen or missing licensed material ≥ 1000 X Appendix C value under such circumstances that it appears to the licensee that an exposure could result to persons in unrestricted areas.	Immediate
		20.2201(a)(1)(ii)	Reports of loss, stolen or missing licensed material > 10 X Appendix C value and is still missing at this time (i.e., within 30 days it becomes known to the licensee).	30 days
	20.2202(a)(1)		Exposure (real or threatened) ≥ TEDE of 25 rem (.25 Sv), or lens dose equiv. ≥ 75 rem (.75 Sv) or shallow dose equiv. (skin\extremities) ≥ 250 rads (2.5 Gy).	Immediate
	20.2202(b)(1)		Exposure (real or threatened) ≥ TEDE of 5 rem (.05 Sv), or lens dose equiv. ≥ 15 rem (.15 Sv), or shallow dose equiv. (skin\extremities) ≥ 50 rems (.5 Sv).	24 hours
	20.2202(a)(2)		Release where individual could have intake ≥ 5 X ALI over 24 hours.	Immediate
	20.2202(b)(2)		Release where individual could have intake > 1 X ALI over 24 hours.	24 hours
		20.2203(a)	Radiation doses, releases or concentrations of radioactive material that exceed the limits.	30 days

NRC Regulatory Reporting Requirements

The following provides a listing of the most commonly encountered material reporting requirements for which Agreement States should have compatible regulations. This table does not contain all of NRC's regulatory reporting requirements. See NRC regulations for all reporting requirements.

Regulatory Requirement	Reporting Category		Brief Summary of Reporting Requirement	Notification
	Within 24 hours	5 - 60 Days		
			shall be made to the NRC Regional Office.	
10 CFR **Part 40**, Domestic Licensing of Source Material	40.60(a) (b)(1)-(b)(4)		Events involving immediate protective actions, unplanned contamination in accessible areas; disabled or malfunctioning equipment; unplanned medical treatments; and unplanned fires or explosions. (Note: Same as 30.50 above except that this is reporting that is required concerning source materials.)	a. Immediate b. 24 hours
10 CFR **Part 70**, Domestic Licensing of Special Nuclear Material	70.50(a) (b)(1)-(b)(4)		Events involving immediate protective actions; unplanned contamination in accessible areas; disabled or malfunctioning equipment; unplanned medical treatments; and unplanned fires or explosions. Essentially the same as 30.50 and 40.60 except that this is reporting that is required concerning special nuclear material (SNM) and there are some small variations in reporting details following Paragraph (c). See 10 CFR 70.4, "Definitions" for a definition of SNM.	a. Immediate b. 24 hours
10 CFR **Part 71**, Packaging and Transportation of Radioactive Material	71.5 49 CFR 171.15 (b)(1) and (2)		10 CFR 71.5 provides that licensees shall comply with the applicable requirements of the Department of Transportation regulations in 49 CFR. 49 CFR 171.15 (b)(1) events involving hazardous materials (which include radioactive materials) requires the immediate reporting of incidents involving hazardous materials (which include radioactive materials) that result in an individual's death, injury requiring hospitalization, evacuation of the general public for at least one hour, The operational flight pattern or routine of an aircraft is altered and the closure of one or more major transportation facility or roadway for at least one hour. 49 CFR 171.15(b)(2) requires the immediate reporting of fire, breakage,	Immediate

NRC Regulatory Reporting Requirements

The following provides a listing of the most commonly encountered material reporting requirements for which Agreement States should have compatible regulations. This table does not contain all of NRC's regulatory reporting requirements. See NRC regulations for all reporting requirements.

Regulatory Requirement	Reporting Category		Brief Summary of Reporting Requirement	Notification
	Within 24 hours	5 - 60 Days		
			spillage, or suspected radioactive contamination occurs involving the shipment of radioactive material.	
Orders Imposing Increased Controls (IC) (EA-05-090, Attachment B)	IC.2.d		After initiating an appropriate response to any actual or attempted theft, sabotage, or diversion of radioactive material, licensees shall notify the NRC Operations Center.	Immediate
Orders Imposing Increased Controls (IC) (EA-05-090, Attachment B)	IC.3.a.4		During transportation of licensed material, if a shipment does not arrive on or about the expected arrival time and through the investigation it is determined that the shipment has become lost, stolen, or missing, the licensee shall immediately notify the NRC Operations Center.	Immediate
Orders Imposing Fingerprinting and Criminal History Records Check (IC) (EA-07-305)	III.A.5		Notify the NRC's Operations Center if the results from a FBI identification and criminal history records check indicate that an individual is identified on the FBI's Terrorist Screening Database.	24 hours

Attachment B

Examples of Reportable Events

Examples of Reportable Events	
This Table provides examples of reportable nuclear material events that are required to be reported by the Agreement States to the NRC.	
NMED Item No. 140511 Not NRC Reportable Event	**Release of Radioactive Material** Uranium One reported a release of yellowcake into the air at the Honeywell Metropolis conversion facility that occurred on 9/9/2014. Uranium One shipped the Lot 51 drums from their Willow Creek facility to Honeywell on 6/23/2014. The lid of drum #43 (which was dried on 4/18/2014) was being removed in the weighing and sampling plant when the lid lifted and U3O8 concentrates escaped, spreading in an approximately six-foot radius around the drum. The Honeywell employee performing the work was not visibly injured; bioassay results for this employee and a nearby employee were below administrative levels and airborne radioactivity measurements were below the administrative level for respiratory protection. The calculated doses for the two employees were 26 and 39 µSv (2.6 and 3.9 mrem). Uranium One reviewed records associated with the drum and determined that the drum's filling time, venting time, and percent moisture content were all in accordance with their procedures. No indication of pressurization (or risk of pressurization) was evident for any of the Lot 51 drums at the time of shipment from Uranium One. Honeywell suspended processing the remaining Lot 51 drums and began an on-site evaluation of the condition of the remaining drums. This examination included drilling the remaining drums to release any potential pressure build-up, removing the drum lids, sampling the drums, and re-lidding and storing the drums for further processing. Uranium One retained Golder Associates to conduct a root cause analysis of this event. Golder determined that the direct cause was the decomposition of uranyl hydrates, resulting in the generation of oxygen gas in the drum. The gas generation likely occurred due to placement of the lid on the drum in such a way that the venting of gases during the cool-down period after drum filling was not properly completed. The NRC concluded that the root cause of this event was the lack of management oversight of the drum venting process. Corrective actions included improving the drum venting and cooling procedures, optimizing the heating and drying of the yellowcake, and revising the drum handling procedure.
NMED Item No. 941710 Reportable within 24 hours under 10 CFR 40.60(b)(1)(i)	**Unplanned Contamination Event from Equipment Failure that Prohibited Entry** The Licensee reported a spill of Yellow Cake Slurry onto the ground both inside and outside of the building where it was being stored. The Yellow Cake thickener tank (product storage vessel) fell through the wall of the building where it was being stored when one of its legs failed, possibly due to the failure of the concrete floor. They believe approximately 75-80% of the 90,000 lbs of slurry is still in the tank. Damage to the tank has not yet been determined, but approximately a third of their filter press was damaged. The spillage is contained and they are putting the contaminated soil into drums and cleaning the inside of the building. There were no injuries or contamination to any workers. Update: The NRC conducted an unannounced inspection of in-situ uranium operations; cleanup and recovery activities following the spill of yellow cake material(U-308). The Licensee satisfactorily met its safety objectives in response to the spill.

	The event did not cause any personnel injuries, significant exposures, operational safety impact, or significant environmental impact. The Licensee reported the tank collapsed because of the presence of moisture in the soil under the concrete slab around the tank. Years of facility floor drainage had seeped under the concrete foundation and weakened the compacted soil.
NMED Item No. 070391 Reportable with 24 hours under 10 CFR 40.60(b)(3)	**Contaminated Worker, Received Medical Treatment** Honeywell International reported that an employee sustained multiple contusions and abrasions to his head, face, and body as a result of a fall from the permanently installed man-lift device on 6/27/2007. The individual was transported to the local medical facility with measurable levels of uranium (U3O8) contamination (5 kdpm/100 cm2) on his clothing. Health Physics personnel accompanied the injured individual to the hospital, where they provided contamination control recommendations to the attending medical staff. No contamination was detected at hospital facilities, equipment, or staff following treatment of the individual. Following decontamination of the injured individual, survey results were less than 1 kdpm/100 cm2. All contaminated materials from the individual's decontamination and treatment were collected and returned to the Honeywell facility.
NMED Item No. 000155 Immediately reportable under 10 CFR Part 20.1906(d)(1)	**Transported Package Exceeded Removable Surface Contamination Limits** The licensee reported that six empty intermodal containers, which had been shipped from the licensee's White Mesa uranium mill site in Blanding, Utah, to the IT Corporation (under contract with the U.S. Army Corps of Engineer's) Ashland 1 FUSRAP site in Tonawanda, NewYork, were found to have localized areas of external surface contamination that exceeded transportation limits. The containers were previously used to ship contaminated Ashland 1 soil material from the Tonawanda site to the licensee's White Mesa Mill, where it was processed as alternate feed material. Removable beta-gamma surface contamination levels reported on the containers ranged up to about 38,000 dpm/100 cm2. The contamination appeared to be splattered clumps of sandy, soil-like material on the outer walls of the containers. There were indications that the material may have been mud from the ore pad area of the mill near where the Ashland 1 material had been unloaded from the containers. However, comparisons between the shipping container contamination samples and samples of material typically found at Ashland 1 gave indications that the soil material found on the outside of the shipping containers did not originate from Ashland 1. The licensee instantly implemented more thorough decontamination procedures for containers that are unloaded at their site. The licensee will also work closely with IT Corporation and IT Corporation's transportation contractor to ensure that procedures complement in providing a comprehensive program for meeting applicable compliance limits on containers released for restricted use and on equipment used to transport the containers.
NMED Item No. 990685 Reportable under 10 CFR Part 71.5	**Transportation Accident With Licensed Material** The licensee reported that a transportation incident occurred near Cisco, Utah, involving a truck transporting uranium contaminated soil. The soil contained approximately 17 GBq (459 mCi) of natural uranium. The exclusive-use truck carrying about 20 tons of the soil tipped over, spilling about 50% of its contents onto the ground on the north side of the highway between the highway and the rail track. The accident occurred on U.S. Highway 50 and 6, 37.4 miles northeast

	of Moab, Utah. The contaminated soil was being shipped in an intermodal container (#25855) from the rail transfer station in Cisco to the licensee's White Mesa Mill in Blanding, Utah. The container was open at the top, but was covered by a tarpaulin. The incident occurred when the truck driver veered off the road to avoid oncoming traffic and was unable to recover. The driver of the truck sustained minor injuries but the truck was not seriously damaged. The Grand County, Utah, Sheriff's Department and the trucking company (Tri-State Motor Transit Company) initially responded to the incident. The spilled material was covered with a plastic cover and was secured pending cleanup. The trucking company later brought in a second, empty container (#25778) and retained the services of a third company (Wastren Remediation, Incorporated, out of Richland, Washington) to clean up the spill. The cleanup was completed at about 0230 MDT on 9/30/1999. Approximately 10 cubic yards of material was recovered along with three to five cubic yards of virgin soil. The material was then returned to the loading site near Cisco. The site of the spill and all equipment used to cleanup the spill was surveyed by the licensee's RSO and determined to be free of contamination. In addition, soil samples were taken in the spill area for analysis by the licensee. The contaminated material involved in the incident was being shipped from the Ashland 1 site located near Tonowanda, New York. The licensee is authorized to receive and process this material as alternate feed material for recovery of its uranium content. The average concentration of uranium in this material is normally 0.06% by weight.
NMED Item No. 120374 Reportable within 30 days under 10 CFR 20.2203(a)(2)(iv)	**Exceedance of Dose Rates in Unrestricted Areas** During an NRC inspection at Uranium One conducted between 4/16/2012 and 4/18/2012, unrestricted areas were identified where dose rates exceeded the limit of 0.02 mSv/hr (2 mrem/hr). The dose rate in an unrestricted area adjacent to Module 8-1 was 0.03 mSv/hr (3 mrem/hr). Also, the dose rate in an unrestricted area adjacent to a locked and secured enclosed truck bed trailer, being used as storage for full yellowcake drums, was 0.03 mSv/hr (3 mrem/hr). Uranium One had not been surveying these areas due to misunderstanding the regulations. A fence was installed and the area was posted as a restricted area. The NRC inspection also identified areas that should have been posted as radiation areas. The dose rate near Precipitation Tank #3 was 0.05 mSv/hr (5 mrem/hr) at 30 cm from the tank surface. Also, the dose rate at 30 cm from a bag filter in Module 8-1 was 0.08 mSv/hr (8 mrem/hr). Uranium One determined that radiation levels in these areas fluctuate due to changes in the concentration of radon daughters. The survey frequency was increased from monthly to weekly and these areas were posted as radiation areas.
NMED Item No. 160101 Not NRC Reportable Event	**Spill of Production Fluid** Power Resources (dba Cameco Resources) reported the release of approximately 4,264 gallons of production fluid at the Smith Ranch-Highland Uranium Project in Converse County, Wyoming. The release was discovered on 2/20/2016 in Mine Unit C at Bellhole #C-18 in the vicinity of Header House C-20 and resulted from the failure of a steel connecting joint (spool) between poly line and steel pipeline. The release was stopped upon discovery during an inspection. A vacuum truck recovered 6,500 gallons of fluid, which included water from recent snow melt. The uranium content of the fluid was 11.5 ppm.

NMED Item No. 150141 Not NRC Reportable Event	**Possible Leak in Storage Pond** On 12/23/2014, Lost Creek ISR reported a possible leak in the south storage pond that was identified by a steady influx of water into the leak detection sump. Approximately 30 gallons of water per day has been pumped out of the sump, as evidenced by the flow totalizer on the sump pump purge line. Conductivity readings from the pond and the sump showed that the sump results were greater than 50% of the pond value. The pond has been frozen since mid-November, making pond sample collection and liner inspection difficult. The four pond monitor wells were measured for water presence; all wells were dry except for one that had a persistent trace amount of water in the bottom. Corrective actions included having an off-site laboratory perform pond and sump water sampling and analysis for quality parameters. Lost Creek ISR will also inspect pond liners and perform repairs if necessary.

Attachment C

Event Reporting Schedule for Agreement States

Event Reporting Schedule for Agreement States			
	Reportable Event Notification[1]	**Agreement State Reporting Schedule to NRC**	**Reporting Methods to NRC**[4]
IMMEDIATE	**Significant** reportable events requiring **immediate notification (i.e., within 4 hours or less**[2]) by Agreement State licensees.	Agreement States should report to NRC immediately of notification by an Agreement State licensee.	Report initial information to the **NRC Operations Center**[5] **(301) 816-5100** FAX #: (301) 816-5151 Email: HOO.HOC@nrc.gov
24 HOURS	**Significant** reportable events requiring notification within **24 hours or less, or next calendar day,** by Agreement State licensees.	Agreement States should report to NRC within 24 hours of notification by an Agreement State licensee.	
	Events involving **theft or terrorist** activities should be reported to the **FBI.**[3]	Agreement States should consider reporting to the FBI within 24 hours of notification.	
5 - 60 DAYS	**5 – 60 day reportable events** requiring **greater than 24 hour** notification by Agreement State licensee and event follow-up reports.	Agreement States should provide 5 - 60 day notification within the same timeframe licensees must report the event to the Agreement States, and any follow-up reports should be provided in a timely manner[6].	NMED Local Agreement State Software or NMED website at http://nmed.inl.gov/ or Mail: U.S. NRC, Branch Chief of RMSB/MSSA, Mail Stop T-8-E24, Washington, DC 20555
VOLUNTARY	Lost, stolen, or abandoned sources reported to the Agreement and non-Agreement States that are non-AEA or unlicensed material and not covered by the above two categories.	Voluntary reporting by the Agreement States and non-Agreement States.[7]	NMED website at http://nmed.inl.gov/ or Mail: U.S. NRC, Branch Chief of RMSB/MSSA, Mail Stop T-8-E24, Washington, DC 20555

[1] Privacy Act Information - Personal or sensitive information should not be included in event descriptions (e.g., names, personal addresses, or-social security-numbers).

[2] For example, events involving lost, actual or attempted theft, sabotage, or diversion of radioactive materials or devices containing "high-risk" sources in quantities greater than or equal to the *quantities of concern* (i.e., quantities greater than or equal to Category 2 sources listed in the International Atomic Energy Agency's Code of Conduct and as outlined in reporting requirements in 10 CFR Part 20.2201.

[3] A revision to the U.S. Code assigns lead responsibility for material events involving possible theft or terrorist activities to the Federal Bureau of Investigation (FBI).

[4] A sample fax to the NRC Operations Center is available in Appendix D of FSME procedure SA-300.

[5] The NRC Operations Center staff will promptly notify the appropriate Region Duty Officer (RDO) and Headquarters staff of Agreement State events. Therefore, no separate notification to other NRC staff by an Agreement State is necessary.

[6] An example of the minimum basic event information required for a complete record is provided in Appendix E of SA-300.

[7] Voluntary reporting is a joint national effort of the NRC and the Conference of Radiation Control Program Directors (CRCPD) to track certain non-AEA, unlicensed or non-reportable AEA lost and found radioactive material.

Attachment D

Sample Fax Sheet to NRC Operations Center

FAX TO: NRC OPERATIONS CENTER (301) 816-5151	
Agreement State Agency:	[**State**] Dept. of Health, Division of Radiation Protection
State Event Report ID No.:	State ID, YY, No., e.g. TN-06-0001
Licensee Name:	County Inspection Inc.
Licensee Number:	CL-Z00X-1
Event date and time:	Month XX, YYYY, between 4:00 and 5:00 am
Event location:	City, State
Event type:	Stolen Radiography Device
Event description:	[**State**] Dept. of Health was notified on [**date**], by a representative from [**licensee**], of the theft of a radiography exposure device [camera] from a locked equipment trailer on Thursday morning, April 6, 2006. The locked camera and the keys to the camera were stolen. The radiography camera is identified as XYZ Company, Model 160B, serial No. B-3333, containing [radionuclide] [**activity, when known**] 88.3 curies of iridium-192. The device cables were not stolen. The State has an inspector on site and will continue to keep NRC informed of the status of our investigation.
Transport vehicle description:	N/A
Notifications:	[**State**] Dept. of Health has notified local police, and the FBI due to possibility of unlawful criminal activity. Press release has not been issued at this time. [**State**] Dept. of Health has received inquiries from the media regarding this incident.
Point of contact:	Minnie C. Gauges, (301) 415-0001

Attachment E

Minimum Required Event Information

Minimum Required Information for a Complete Event Report	
1. Essential Details	**3. Device/Associate Equipment**
a. Narrative event description (e.g., Event circumstances and details including source radionuclide and activity).	For equipment/device involved indicate the manufacturer, model and serial number, and provide clear description of any equipment problems.
b. Report identification number.	**4. Release of Licensed Material or Contamination**
c. Event date and notification date.	Release type (air or water); contamination (person or surface); isotope and activity released.
d. Licensee/reporting party information (i.e., name license number, and address).	**5. Medical Event**
e. Location (site) of event.	a. Procedure administered; dose intended and actual dose administered; isotope and activity administered; target organ.
f. Whether the event is NRC reportable and the applicable reporting requirement.	b. Patient and Referring Physician notified?
g. Cause and corrective actions (States and licensees' actions).	**6. Overexposure**
h. Notifications: local police, FBI, and other States; as needed.	a. Radiation source and activity.
i. Indicate if there are any generic implications (i.e., generic issues or concerns).	b. Exposure dose and exposure type (e.g., whole body, extremity, etc.).
2. Source/Radioactive Material	**7. Transportation**
Isotope and activity; manufacturer, model and serial number, and leak test results, if applicable.	Type of transport; identity of shipper; package type and ID number (if available).

Attachment F

Sample Event Report Cover Page

AGREEMENT STATE

EVENT REPORT ID NO. __ - __ - ___

(State\YY\No.)

DATE:

TO: **Branch Chief**
Radioactive Materials Safety Branch

SUBJECT:

STATE:

Signature and Title: _____

_____

_____

_____

Public Availability of Event Information: Any event information that is considered preliminary pre-decisional information by the State should be clearly identified on the cover page as follows: "Preliminary, **Not for Public Disclosure**." For event information in NRC's possession, the final determination on whether to withhold from public disclosure will be made by NRC on a case by case basis in accordance with the requirements of 10 C.F.R Part 9.

Attachment G

Radionuclides of Concern

Radionuclide	Quantity of Concern[1] (TBq)	Quantity of Concern[2] (Ci)
Am-241	0.6	16
Am-241/Be	0.6	16
Cf-252	0.2	5.4
Cm-244	0.5	14
Co-60	0.3	8.1
Cs-137	1	27
Gd-153	10	270
Ir-192	0.8	22
Pm-147	400	11,000
Pu-238	0.6	16
Pu-239/Be	0.6	16
Ra-226[5]	0.4	11
Se-75	2	54
Sr-90 (Y-90)	10	270
Tm-170	200	5,400
Yb-169	3	81
Combinations of radioactive materials listed above[3]	See Footnote Below[4]	

[1] The aggregate activity of multiple, collocated sources of the same radionuclide should be included when the total activity equals or exceeds the quantity of concern.

[2] The primary values used for compliance with this Order are TBq. The curie (Ci) values are rounded to two significant figures for informational purposes only.

[3] Radioactive materials are to be considered aggregated or collocated if breaching a common physical security barrier (e.g., a locked door at the entrance to a storage room) would allow access to the radioactive material or devices containing the radioactive material.

[4] If several radionuclides are aggregated, the sum of the ratios of the activity of each source, *i* of radionuclide, *n*, $\mathbf{A}_{(i,n)}$, to the quantity of concern for radionuclide *n*, $\mathbf{Q}_{(n)}$, listed for that radionuclide equals or exceeds one. [(aggregated source activity for radionuclide A) ÷ (quantity of concern for radionuclide A)] + [(aggregated source activity for radionuclide B) ÷ (quantity of concern for radionuclide B)] + etc..... ≥ 1.

5On August 31, 2005, the NRC issued a waiver, in accordance to Section 651(e) of the Energy Policy Act of 2005, for the continued use and/or regulatory authority of Naturally Occurring and Accelerator-Produced Material (NARM), which includes Ra-226. The NRC plans to terminate the waiver in phases, beginning November 30, 2007, and ending August 7, 2009. The NRC has authority to regulate discrete sources of Ra-226, but has refrained from exercising that authority until the date of an entity's waiver termination. For entities that possess Ra-226 in quantities of concern, this Order becomes effective upon waiver termination. For information on the schedule for an entity's waiver termination, please refer to the NARM Toolbox website at http://nrcstp.ornl.gov/narmtoolbox.html.

Attachment H

References

The following is a list of NRC documents, manuals and procedures that contain additional information on event response and AOs.

NRC Policy

Staff Requirements Memorandum, *Procedures for Statement of Principles and Policy for the Agreement State Program and Policy Statement on Adequacy and Compatibility of Agreement State Programs,* dated June 30, 1997

Final Policy Statement on Adequacy and Compatibility of Agreement State Programs, dated September 3, 1997

NRC Report

Report to Congress on Abnormal Occurrences, NUREG-0090

Congressional Budget Justification FY 2013, NUREG-1100, Vol. 28, February 2012, annual report to Congress required by GPRA.

NMSS Licensee Newsletter, NUREG/BR-0017

NRC Management Directives

5.9 Adequacy and Compatibility of Agreement State Programs

5.12 International Nuclear and Radiological Event Scale (INES) Participation

6.4 Generic Issues Program

8.1 Abnormal Occurrence Reporting Procedure

8.10 NRC Assessment Program for an Event Occurring at a Medical Facility

8.14 Agency Action Review Meeting, AARM

NRC Inspection Manual Chapters

1301 Response to Radioactive Material Incidents That Do Not Require Activation of the NRC Incident Response Plan

1302 Follow-up Actions and Action Levels for Radiation Exposures Associated with Material Incidents Involving Members of the Public

1303 Requesting Emergency Acceptance of Radioactive Material by the U.S. Department of Energy (DOE)

1330 Response to Transportation Accidents Involving Radioactive Materials

1360 Use of Physician and Scientific Consultants in the Medical Consultant Program

2800 Materials Inspection Program

NMSS Correspondences

All Agreement State Letter (SP-98-018), dated March 17, 1998, "Use of the Nuclear Material Events Database (NMED) as a Central Listing of Lost or Stolen Sealed Sources and Devices."

All Agreement State Letter (SP-98-038), dated May 5, 1998, "Expansion of Federal Bureau of Investigation (FBI) Criminal Investigative Jurisdiction to Include Byproduct Materials."

NMSS Procedures

SA-100 Implementation of the Integrated Materials Performance Evaluation Program

SA-105 Reviewing the Common Performance Indicator, Technical Quality of Incident and Allegation Activities

SA-200 Compatibility Categories and Health and Safety Identification for NRC Regulations and Other Program Elements

Event Notification and Response

FBI A revision to Section 831 of Chapter 39 of Title 18 of the U.S. Code regarding criminal activity includes a significant expansion of Federal Bureau of Investigation jurisdiction to initiate criminal investigations and pursue prosecutions when radioactive materials are involved. In instances involving the suspected criminal misuse of nuclear material and byproduct material, your notification of the FBI is warranted. However, the U.S. Attorney's Office and the FBI will determine whether or not a criminal investigation is to be conducted by the FBI or deferred to State or local authorities for investigation and prosecution. The Commission also requests that Agreement States inform NRC of reports of events involving theft or terrorist activities warranting FBI notification.

NRF The *National Response Framework* is a guide that details how the Nation conducts all-hazards response– from the smallest incident to the largest catastrophe. This document establishes a comprehensive, national, all-hazards approach to domestic incident response. The Framework identifies the key response principles, as well as the roles and structures that organize national response. It describes how communities, States, the Federal Government and private-sector and non-governmental partners apply these principles for a coordinated, effective national response. The NRC is the coordinating agency for domestic incident management for incidents involving nuclear materials or facilities licensed by the NRC or Agreement States.

DOT/NRC The National Response Center is a Department of Transportation, Pipeline and Hazardous Materials Safety Administration service that serves as a national point of contact for reporting hazardous materials transportation and pipeline accidents (e.g., oil, chemical, non-AEA radiological, biological, and etiological discharges). The Center maintains a 24 hour call line at 1-800-424-8802.

REACTS The Radiation Emergency Assistance Center/Training Site (REACTS), is a Department of Energy (DOE) resource headquartered in Oak Ridge, Tennessee, telephone (865) 576-1005. REACTS is available 24 hours a day to provide medical and radiological assistance either from the REACTS facility or the accident site. Additionally, REACTS maintains a listing of other professionals throughout the country who are recognized as having highly specialized expertise and equipment to manage a particular area of concern.

AVAILABILITY OF REFERENCE MATERIAL

NRC documents: Event Notifications, Preliminary Notifications, Inspection Manuals and Procedures, NUREG Series technical reports, Regulatory Guides, etc., are available at the NRC's document collections website at http://www.nrc.gov/reading-rm/doc-collections/. The Office of Nuclear Material Safety and Safeguards (NMSS) documents are available at the NMSS external website at http://nrc-stp.ornl.gov/.