U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REGULATORY RESEARCH

DRAFT REGULATORY GUIDE AND VALUE/IMPACT STATEMENT

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FOR COMMENT

PROPOSED REVISION 2 TO REGULATORY GUIDE 3.5

STANDARD FORMAT AND CONTENT OF LICENSE APPLICATIONS FOR URANIUM MILLS

This regulatory guide and the associated value/impact statement are being issued in draft form to involve the public in the early stages of the development of a regulatory position in this area. They have not received complete staff review and do not represent an official NRC staff position.

Public comments are being solicited on both drafts, the guide (including any implementation schedule) and the value/impact statement. Comments on the value/impact statement should be accompanied by supporting data. Comments on both drafts should be sent to the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Docketing and Service Branch, by NOV 6 1981

Requests for single copies of draft guides (which may be reproduced) or for placement on an automatic distribution list for single copies of future draft guides in specific divisions should be made in writing to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Technical Information and Document Control.

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INTRODUCTION

A Nuclear Regulatory Commission (NRC) source material license is required under the provisions of 10 CFR Part 40, "Domestic Licensing of Source Material," to process or refine ores containing by weight 0.05 percent or more of uranium, after removal from their place of deposit in nature. An applicant for a new license or renewal of an existing license to receive, possess, and use source materials is required to provide detailed information on the proposed facilities, equipment, experience, and procedures. This information is used by the Commission in determining whether the applicant's proposed activities will, among other things, result in undue risk to the health and safety of the public. General guidance for filing an application is provided in § 40.31 of 10 CFR Part 40, "Applications for Specific Licenses."

The purpose of this guide is to provide specific guidance on the format and content of an application for an NRC Source Material License authorizing uranium milling activities and to reference other NRC regulatory guides necessary to prepare specific sections of the applications. NRC regulatory guides that are applicable to uranium milling activities and that should be reviewed in conjunction with the preparation of a license application will be indicated in the appropriate sections of this guide and listed in Appendix A. In particular, various chapters of Regulatory Guide 3.5 (except Chapter 1) are discussed in more detail in Regulatory Guide 3.8, "Preparation of Environmental Reports for Uranium Mills." The environmental report is an integral part of the application and provides greater detail in many areas than does the general application. Therefore, Regulatory Guides 3.5 and 3.8 should be used in conjunction with each other in filing a complete application with sections of the environmental report condensed in the general application (except Chapter 1). Specific reference to the appropriate sections of Regulatory Guide 3.8 will be made throughout this guide. Appendix A also lists draft regulatory guides that contain guidance being developed by the NRC staff in this area and that have been issued for public comment as indicated.

The information in this guide is intended to provide instructive guidance and should not be considered a substitute for a careful evaluation of the proposed program by the applicant or for ensuring that the application clearly and adequately describes the radiation safety procedures that will be followed.

Information not specifically discussed in this guide should be included in the application if it is an important part of an applicant's radiation protection program. An incomplete application will delay processing and may result in denial of a license application.

Changes to existing license programs require the issuance of an appropriate license amendment. An application for such an amendment should describe the proposed changes in detail.

Filing an Application

An application for a uranium milling license should be filed in accordance with the requirements specified in § 40.31 of 10 CFR Part 40. As required by paragraph 40.31(f), an application for a new license should be filed at least nine months prior to the start of anticipated construction of the proposed mill. An application for renewal of an existing license should be filed at least thirty days prior to the expiration of the existing license. Applications may be filed with the Director, Office of Nuclear Materials Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. Applications may also be filed in person at the Commission's offices at 1717 H Street NW., Washington, D.C., or 7915 Eastern Avenue, Silver Spring, Maryland. All applications must be accompanied by a remittance in the full amount of the fee specified in § 171.31 of 10 CFR Part 170, "Fees for Facilities and Materials Licenses and Other Regulatory Services Under the Atomic Energy Act of 1954, as Amended."

The National Environmental Policy Act of 1969 (83 Stat. 852), implemented by Executive Order 11514 and the regulations of the Council on Environmental Quality (40 CFR Parts 1500-1508), require that all agencies of the Federal Government prepare detailed environmental statements on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment. The principal objective of the National Environmental

Policy Act of 1969 is to build into the agency decisionmaking process an appropriate and careful consideration of environmental aspects of proposed actions. The NRC policy and procedures for the preparation and processing of environmental impact statements and related documents in connection with the Commission's licensing and regulatory activities are set forth in 10 CFR Part 51, "Licensing and Regulatory Policy and Procedures for Environmental Protection."

The provisions of 10 CFR Part 51 and paragraph 40.31(f) of 10 CFR Part 40 require the submittal of environmental reports by applicants for NRC permits and licenses for certain facilities, including uranium mills. On the basis of the information filed in the environmental report and evaluations made pursuant to Part 51, the Director of the Office of Nuclear Materials Safety and Safeguards or his designee must conclude that the action called for is the issuance of a proposed license with any appropriate conditions to protect environmental values. Starting construction prior to such a conclusion constitutes grounds for denial of a license to possess and use source material at the mill. See § 40.32(e) of 10 CFR Part 40.

Uranium mill licenses are issued for 5-year periods and are renewable over the life of the project. License renewal applications are processed in a manner similar to that used for new applications. Operational experience, site-specific data, and proposed continuing activities are the primary factors considered by the NRC staff in processing renewal applications.

Presentation of Information

The applicant should strive for clear, concise presentation of the information in the license application. Each subject should be treated in sufficient depth and with sufficient documentation* to permit the Commission to independently evaluate the information presented. Tables, line drawings, and photographs

*Documentation as used in this guide means presentation of information, supporting data, and statements and includes (1) references to published information, (2) citations from the applicant's experience, and (3) references to unpublished information developed by the applicant or the applicant's consultants. Statements not supported by documentation may be acceptable provided the applicant identifies them as such or as expressions of belief or judgment.

should be used whenever they contribute to the clarity and brevity of the application. The number of significant figures stated in numerical data should reflect the accuracy of the data. Descriptive and narrative passages should be brief and concise. In cases where test results to support conclusions are presented, the procedures, techniques, and equipment used to obtain the test data should be included.

Information previously submitted to the Commission may be incorporated into the application by reference. Each reference should be clear and specific, i.e., the reference should indicate by document, date, page, and paragraph the information the applicant wishes to reference and how such information is pertinent.

Pertinent published information related to a proposed site or facility and its surroundings should be referenced. When published information or assumptions may be essential to evaluate specific aspects of the proposed activities, they should be included in summary or verbatim form or as an appendix to the application.*

All pages of the application should be numbered and dated.

Contents of an Application

The application should contain the information specified in items 1 through 8 of Form NRC-2. The information in items 9 through 14 of Form NRC-2 should be incorporated into the various items identified in the chapters of this Standard Format identified below. Particular attention should be given to the information requested in Chapter 5 of this Standard Format. Compliance with the specifications delineated in Chapter 5 is normally made a specific condition of the NRC operating license. The written specifications to be presented

*The distinction between pertinent and essential hinges on the effect that the information may have in reviewing potential impacts to public health and safety and the environment. Useful information that is not likely to impact public health and safety or the environment is pertinent, whereas information that may reasonably be necessary for the review to ensure protection of public health and safety and the environment is essential.

in the application in accordance with Section 5.5.12 of Chapter 5 (these written specifications are required by paragraph 40.31(g) of 10 CFR Part 40) are related to information in other chapters. Accordingly, Section 5.5.12 of Chapter 5 of this Standard Format should be reviewed in connection with other information throughout the total application.

1. PROPOSED ACTIVITIES

This chapter of the application should summarize the overall proposed activities for which a license is requested in sufficient detail to permit a reviewer to obtain a basic understanding of the proposed activities. Review of the chapters that follow can then be accomplished with better perspective and with recognition of their relative importance to the overall operations. The following subjects should be addressed: the corporate entities; a brief description of the proposed mill and its location; the maximum design throughput of the mill; U_3O_8 content of the ore to be processed; process efficiency and concentrate yield; milling process; tailings management methods; estimated schedules for construction, startup, and duration of operation; decommissioning and reclamation plans; surety arrangements covering eventual facility decommissioning and site reclamation; and plans for eventual transfer of tailings and tailing disposal sites to an appropriate Federal or State agency. See Regulatory Guide 3.8, Chapter 1.

2. SITE CHARACTERISTICS

This chapter should provide information on the location of the mill and a description of the geographical, demographical, meteorological, hydrological, seismological, and geological characteristics of the site and surrounding vicinity. Applications may reference the pertinent sections in the accompanying environmental report. See Regulatory Guide 3.8, Chapter 2, for additional information for each of the following sections in Chapter 2 of this guide.

2.1 Site Location and Demography

2.1.1 Site Location

A description of the area in which the mill is located should be provided, including (1) maps showing the location of the site with respect to State, county, and local subdivisions and nearby inhabited areas and (2) maps showing

the mill, mill perimeter, tailings location, exclusion area boundary, company property, abutting and adjacent properties, nearby water bodies, inhabited areas, and other relevant details.

2.1.2 Demography

A description of the potentially affected population within a 50-mile (80 km) radius of the mill should be provided. Current information on the resident population based on the most recent census data, as well as the estimated annual population growth for the period through the end of mill operations and decommissioning, should be provided. Significant transient or seasonal population variations, including the bases for assumptions and projections, should be identified and discussed.

2.2 Meteorology

This section should provide a meteorological description of the site and surrounding area. Guidance on acceptable onsite meteorological measurements and data format is being developed by the NRC staff in Proposed Revision 1 to Regulatory Guide 1.23, which was designated SS 926-4 and issued for comment (see Appendix A).

2.3 Hydrology

This section should provide all hydrologically related design bases, performance requirements, monitoring specifications, and operating procedures important to safety. Identify the sources of the hydrological information, the types of data collected, and the methods and frequency of collection.

2.3.1 Groundwater

Describe the regional and local groundwater aquifers, formations, sources, and sinks. Describe the recharge potential of the immediate plant area, including vertical and horizontal permeabilities of the natural and modified terrain,

as well as that of tailings areas. Indicate gradients and seasonal variations in groundwater levels beneath the site.

2.3.2 Surface Water

Describe the location, size, shape, and other hydrologic characteristics of streams, rivers, lakes, marshes, estuaries, etc., of the environs. Include a description of any upstream and downstream river control structures.

2.4 Geology and Seismology

Provide the geologic and seismic characteristics of the area and site. Identify the nature of the investigations performed, the results of investigations, conclusions, and identification of information sources. Supplement the written description with tabular and graphic material as appropriate.

2.4.1 Geology

Describe the geologic aspects of the site. The discussion should note the broad features and general characteristics of the site and environs, including stratigraphy and structural geology. Describe characteristics of the subsurface soil or rock, including the identification and evaluation of zones of deformation that might act as conduits for contaminants.

2.4.2 Seismology

Discuss the seismicity (including history) of the region. Where possible, associate seismic events with tectonic features identified in the geology discussion.

3. MILL PROCESS AND EQUIPMENT

This chapter will describe the mill process and operating equipment. See Regulatory Guide 3.8, Chapter 3, for additional information for Sections 3.1 and 3.2 of this guide.

3.1 Mill Process

Provide a quantitative and qualitative description of the mill process.

3.2 Mill Equipment

Provide a physical description and the operating characteristics for all major items of mill process equipment. Include a diagram of the mill layout indicating areas and points where dusts, fumes, and gases are generated. The diagram should also show the location of the ventilation, filtration, confinement, and dust collection systems referenced in item 4.1 and the location of radiation monitoring equipment referenced in items 5.5.1 and 5.5.2.

3.3 Instrumentation

Provide a description of all process instrumentation and control systems relevant to safety and all radiation safety sampling and monitoring instrumentation, including their minimum specifications and operating characteristics. Also, describe and identify by make, model number, purpose, and location each radioactive source and gauging device used throughout the mill for which a license is required under the provisions of 10 CFR Part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material."* The instrumentation associated with leak testing such sources and devices should be identified in this section.

4. EFFLUENT CONTROL AND WASTE MANAGEMENT SYSTEMS

4.1 Gaseous and Airborne Particulates

Provide a description of all ventilation, filtration, confinement, and dust collection systems that are used during mill operations to control airborne radioactive materials. Include the type, specifications, and locations of such systems, e.g., ore transfer points, crushing, grinding. Include an analysis

*These sources will be authorized in the mill operating license rather than in separate NRC byproduct material licenses.

of the efficiency of the equipment as designed and operated to prevent radiation exposures to employees and to limit such exposures to as low as is reasonably achievable (ALARA). The definition and operating philosophy for ALARA are contained in § 20.1(c) of 10 CFR Part 20 and Regulatory Guide 8.10. Also, include a description of mill discharge stacks, including stack heights, types and concentration of effluents discharged, and methods (e.g., scrubbers, filters) for controlling releases of radioactive materials and for limiting such releases to as low as is reasonably achievable. See Regulatory Guide 3.8, Chapters 3, 5, and 6.

4.2 Liquids and Solids

Provide information in this section on waste management systems of all structural and operational aspects associated with the management of liquid and solid wastes generated from the proposed milling operations. Applicable information concerning this subject provided in Chapter 2 need not be repeated here. See Regulatory Guide 3.8, Chapters 3, 5, and 6.

4.2.1 Above-Grade Systems

Where retention systems such as levees, dikes, and ponds are used to prevent the release of liquid or solid wastes containing radioactive material to offsite areas, provide the information specified in the regulatory position of Regulatory Guide 3.11.

4.2.2 Below-Grade Systems

As provided in Criterion 3 of Appendix A to 10 CFR Part 40, the "prime option" for disposal of tailings is placement below grade either in mines or specially excavated pits (that is, where the need for any specially constructed retention structure is eliminated). Provide in this section a description of the construction and operation of below-grade systems for the future disposal of tailings in applications for both license renewals and new licenses.*

*The evaluation of alternative sites and disposal methods performed by mill operators in support of their tailings disposal program should be provided in the environmental report. See Regulatory Guide 3.8.

4.2.3 Effluent Releases

If effluents are to be released into waters of the United States, provide a discussion of the status of efforts to obtain a water quality certification under Section 401 and discharge permits under Section 402 of the Federal Water Pollution Control Act, as amended, or submit copies of these items if already issued.

4.3 Contaminated Equipment

Provide a description of the methods for disposing of contaminated waste solids (such as filters, filter presses, obsolete or worn-out equipment) that are generated in the milling process.

5. OPERATIONS

Compliance with the statements, representations, and procedures provided in this chapter will normally be made a specific condition of the NRC operating license. Thus, the following should be considered as specific commitments on the part of the applicant for conducting mill operations and radiological protection programs. In order to facilitate administration of the license by the licensee and the NRC, this chapter should be complete in itself, insofar as possible, without references to other submittals. Also, the bases for all programs addressed in this section, as well as a demonstration of their adequacy, should be provided. To aid the licensee in this regard the NRC staff has published regulatory guides that detail the minimally acceptable staff positions on specific aspects of the radiation safety program. These guides are listed in Appendix A and referenced in appropriate subsections below.

5.1 Corporate Organization and Administrative Procedures

5.1.1 Description of Organization

Provide a detailed description of the applicant's organization, including authority and responsibility of each level of management or supervision in regard to development, review, approval, implementation, and adherence to

operating procedures, radiation safety programs, routine and nonroutine maintenance activities, and changes in any of the above. Guidance being developed by the NRC staff in this area has been issued for public comment as Draft Regulatory Guide OH 941-4 (see Appendix A).

5.1.2 Management Supervisory Program

Describe the management supervisory program and administrative procedures to ensure that all activities are conducted in accordance with written operating procedures that are approved and reviewed at specified frequencies by the applicant's radiation safety staff. This program should provide a method for ensuring that any nonroutine work or maintenance activity not covered by an effective operating procedure is conducted in accordance with a special work permit reviewed and approved by the applicant's radiation safety staff. Guidance being developed by the NRC staff in this area has been issued for public comment as Draft Regulatory Guide OH 941-4 (see Appendix A).

5.1.3 Management Audit and Inspection Program

Describe the management audit and internal inspection program, including the types and scopes of reviews and inspections. Provide the frequencies, action levels, and corrective action measures in regard to the foregoing activities. Also, identify by management position the individual responsible for each phase of the audit and inspection program. Guidance being developed by the NRC staff in this area has been issued for public comment as Draft Regulatory Guide OH 941-4 (see Appendix A).

5.1.4 ALARA Program

Provide a detailed description of management's program for ensuring that employee exposures (both airborne and external radiation) and effluent releases are as low as is reasonably achievable. Guidance being developed by the NRC staff in this area has been issued for public comment as Draft Regulatory Guide OH 941-4 (see Appendix A).

5.2 Qualifications

Provide a description of the minimum qualifications and experience required of personnel to hold the positions that are assigned the responsibility for developing, conducting, and administering the radiation safety program for the mill. Also, provide as an appendix the qualifications of the individuals currently holding these positions. (If specific individual appointments have not been made at the time an application is filed, the minimum qualifications for the positions will suffice.) Guidance being developed by the NRC staff in this area has been issued for public comment as Draft Regulatory Guide OH 941-4 (see Appendix A).

5.3 Training

Provide a description of the employee radiological protection training program addressing the following: content of the initial training or indoctrination, testing, on-the-job training, and extent and frequency of retraining. As an appendix, provide a copy of the written radiological safety instructions provided employees in conformance with § 19.12 of 10 CFR Part 19. These instructions should include provisions for personal hygiene, including washing, contamination surveying prior to eating or leaving the mill, instructions for wearing personnel monitoring devices and respirators, and instructions for good housekeeping and for cleaning up dust and spills within the mill. Guidance being developed by the NRC staff in this area has been issued for public comment as Draft Regulatory Guide OH 941-4 (see Appendix A).

5.4 Security

Provide a description of the method for preventing unauthorized entry to both the mill and the tailings systems. Guidance being developed by the NRC staff in this area has been issued for public comment as Draft Regulatory Guide OH 941-4 (see Appendix A).

5.5 Radiation Safety

Provide a description of the radiation safety program that has been developed for determining that occupational radiation exposures and effluent releases will be as low as is reasonably achievable. (See § 20.1(c) of 10 CFR Part 20 and Regulatory Guide 8.10.) Additional guidance being developed by the NRC staff in this area has been issued for public comment as Draft Regulatory Guide OH 941-4 (see Appendix A).

5.5.1 External Radiation Surveys

Describe the methods, instrumentation, and equipment for determining exposures of employees to external radiation during normal and nonroutine operations, maintenance, and cleanup activities. Provide the type of surveys conducted, criteria for determining survey locations, frequency of surveys, action levels, management audits, and corrective action requirements. For personnel monitoring devices such as film badges, indicate the number and category of personnel involved in the program and the sensitivity and range of the devices. For survey instruments, provide instrument sensitivities, ranges, and calibration methods and frequencies in an appendix. Guidance being developed by the NRC staff in this area has been issued for public comment as Draft Regulatory Guides OH 710-4 and OH 941-4 (see Appendix A).

5.5.2 Airborne Radiation Surveys

Describe the sampling program that is followed to determine concentrations of airborne radioactive materials (including radon) within the mill during routine and nonroutine operations, maintenance, and cleanup activities. Guidance being developed by the NRC staff in this area has been issued for public comment as Draft Regulatory Guides OH 710-4 and OH 941-4 (see Appendix A). In the description of the sampling program include:

1. The criteria for determining sampling locations with respect to process operation and personnel occupancy, and

2. The frequency of sampling, type of analysis, sensitivity of overall sampling and analysis, action levels, management audits, corrective action requirements, and instrumentation calibration frequency. Procedures for sample analysis and instrument calibration should be included as an appendix.

5.5.3 Internal Radiation Dosimetry Methods

Describe the procedure followed in determining the intake of radioactive materials in conformance with § 20.103 of 10 CFR Part 20 for each employee who occupies areas where airborne radioactive materials exist. Include exposures incurred during nonroutine operations, maintenance, and cleanup activities as well as routine activities. Guidance being developed by the NRC staff in this area has been issued for public comment as Draft Regulatory Guides OH 710-4 and OH 941-4 (see Appendix A).

5.5.4 Bioassay Program

Describe the bioassay program to be conducted to confirm the results derived from the programs identified in Sections 5.5.2 and 5.5.3. Indicate the number and category of personnel involved in the program, the types and frequencies of bioassays performed, and action level criteria to be applied to bioassay results. See Regulatory Guide 8.22.

5.5.5 Contamination Survey Program

Describe the survey program to determine that employees (and their workclothes or coveralls, etc.) entering clean areas (lunchrooms, offices, etc.) of the mill or leaving the mill site are not contaminated with radioactive materials. Include good housekeeping and cleanup requirements and specifications in mill process areas to control contamination. Describe the frequency of surveys of clean areas; the survey methods; and the minimum sensitivity, range, and calibration frequency of survey equipment. Provide contamination criteria or action levels for clean areas and for the release of materials, equipment, and workclothes to clean areas or from the site. Procedures for instrument

calibration should be included as an appendix. Guidance being developed by the NRC staff in this area has been issued for public comment as Draft Regulatory Guides OH 710-4 and OH 941-4 (see Appendix A).

5.5.6 Environmental and Effluent Monitoring Program

5.5.6.1 Airborne Effluent Survey Program. Describe the survey program, methods, and procedures for determining concentrations and quantities of airborne radioactive materials released to the environs and the environmental monitoring program to be conducted; provide the technical basis therefor (i.e., a correlation of stack heights, meteorological characteristics, etc.) to determine environmental concentrations.

For both environmental and effluent monitoring, the frequency of sampling and analysis, the types and sensitivity of analysis, the action levels and corrective action requirements, and the minimum number and criteria for locating environmental and effluent monitoring stations should be provided. Provide the step-by-step procedure for sample analysis of natural uranium, radium-226, thorium-230, lead-210, and radon-222 in an appendix. Also in an appendix, show the proposed locations of the monitoring stations on a topographic map showing the mill and surrounding area. See Regulatory Guides 4.14 and 4.15.

5.5.6.2 Liquid Effluent Survey Program. Describe the liquid effluent survey program to determine if process effluents are reaching subterranean or surface water supplies. This should include the technical basis therefor, the minimum number of monitoring locations, the criteria for locating sampling stations, the frequency of sampling, and the action levels and corrective action requirements. Provide the step-by-step procedure for sample analysis of natural uranium, radium-226, lead-210, polonium-210, and thorium-230 in an appendix. Also in an appendix, show the proposed monitoring stations on a topographic map showing the mill and surrounding area. See Regulatory Guides 4.14 and 4.15.

5.5.6.3 Other Environmental Monitoring. Describe other types of environmental monitoring as may be appropriate including direct radiation, soil, sediment, vegetation, and animal sampling. See Regulatory Guides 4.14 and 4.15.

5.5.7 Interim Stabilization Procedures

Describe the interim controls and stabilization procedures (during milling operations) to eliminate the blowing of tailings from the tailings retention system and the ore dust from the ore piles to unrestricted areas. Include a demonstration of the adequacy of these procedures under potential wind and weather conditions at the site location. See Appendix A to 10 CFR Part 40.

5.5.8 Performance Analysis for Mill Ventilation and Effluent Collection Systems

Provide the minimum performance specifications, e.g., filtration or scrubber efficiency and air flow, for operating the mill ventilation, filtration, confinement, and dust collection systems throughout the mill and associated laboratories at their reasonably expected best performance. Include the frequency of tests and inspections to ensure that these specifications are being met. Guidance being developed by the NRC staff in this area has been issued for public comment as Draft Regulatory Guide OH 941-4 (see Appendix A).

5.5.9 Mill Site Decommissioning Program and Surety Arrangements

Provide a decommissioning program that includes reclamation of the mill site at the termination of milling activities and the surety arrangements to ensure that sufficient funds are available to complete this decommissioning program. See Appendix A to 10 CFR Part 40.

5.5.10 Tailings Reclamation Performance Objectives

Provide a tailings management and reclamation program addressing the following performance objectives (see Appendix A to 10 CFR Part 40):

1. Reduce direct gamma radiation from the impoundment area to essentially background.

2. Reduce the radon emanation rate from the impoundment area to less than 2 pCi/sec-m^2 by placing sufficient earth cover, but not less than 3 meters, over the tailings.

3. Eliminate the need for an ongoing monitoring and maintenance program following successful reclamation.

4. Provide surety arrangements to ensure that sufficient funds are available to complete the full reclamation plan.

5.5.11 Appendix A Written Specifications

Paragraph 40.31(h) of 10 CFR Part 40 requires that an application for a license for uranium milling contain proposed written specifications relating to milling operations and the disposition of tailings or wastes (i.e., byproduct material as defined in the Uranium Mill Tailings Radiation Control Act of 1978, as amended) to achieve the requirements and objectives set forth in Appendix A to 10 CFR Part 40. Furthermore, each application must clearly demonstrate how the requirements and objectives set forth in Appendix A to 10 CFR Part 40 have been addressed. This section should provide the written specifications required by paragraph 40.31(h). Reference may be made to information presented in the foregoing chapters. However, such information should be succinctly presented in this section as written specifications to clearly demonstrate how the requirements and objectives in Appendix A have been addressed.

6. ACCIDENTS AND CONTINGENCY RESPONSE PLANS

A spectrum of potential mill accidents ranging from trivial to serious should be established by classes of occurrence, and each class of accidents should be appropriately evaluated. The evaluation should include a discussion of measures that have been implemented to prevent accidents and a demonstration of the adequacy of the methods. Emergency plans and training for coping with accidents should also be described. For example, potential accidental fires should be discussed in terms of occurrence, prevention, detection and suppression mechanisms (both manual and automatic), and emergency plans for coping therewith. The adequacy of the program should also be discussed. See Regulatory Guide 3.8, Chapter 7.

7. QUALITY ASSURANCE

The quality assurance program for all phases of the milling project (including design, construction, startup, and operation) and the radiation safety program (including the in-plant, effluent, and environmental monitoring programs) should be defined and discussed. Also, discuss the corrective action measures established to ensure that conditions adverse to quality are identified and corrected and that the cause of significant conditions adverse to quality is determined and corrective action taken to preclude repetition. See Regulatory Guide 4.15.

*8. EVALUATION OF ALTERNATIVES

Where the proposed course of action was based on the consideration of various alternatives, the benefit-cost analysis used in arriving at the ALARA concept should be presented and the rationale for the recommended course of action should be included. See § 20.1(c) of 10 CFR Part 20 and Regulatory Guides 8.10 and 3.8 (Chapters 10 and 11). Guidance being developed by the NRC staff in this area has been issued for public comment as Draft Regulatory Guide OH 941-4 (see Appendix A).

APPENDIX A

Regulations, Regulatory Guides, and Draft Regulatory Guides Pertinent to Uranium Milling Activities

1. 10 CFR Part 19, "Notices, Instructions and Reports to Workers; Inspections"

2. 10 CFR Part 20, "Standards for Protection Against Radiation"

3. 10 CFR Part 40, "Domestic Licensing of Source Material"

4. 10 CFR Part 51, "Licensing and Regulatory Policy and Procedures for Environmental Protection"

5. 40 CFR Part 190, "Environmental Protection Standards for Nuclear Power Plants"

6. 40 CFR Parts 1500-1508 (Regulations of the Council on Environmental Quality)

7. Regulatory Guide 3.8, "Preparation of Environmental Reports for Uranium Mills"

8. Regulatory Guide 3.11, "Design, Construction, and Inspection of Embankment Retention Systems for Uranium Mills"

9. Regulatory Guide 3.11.1 "Operational Inspection and Surveillance of Embankment Retention Systems for Uranium Mill Tailings"

10. Regulatory Guide 4.14, "Radiological Effluent and Environmental Monitoring at Uranium Mills"

11. Regulatory Guide 4.15, "Quality Assurance for Radiological Monitoring Programs (Normal Operations) - Effluent Streams and the Environment"

12. Regulatory Guide 8.10, "Operating Philosophy for Maintaining Occupational Radiation Exposures as Low as Is Reasonably Achievable"

13. Regulatory Guide 8.22, "Bioassay at Uranium Mills"

14. Draft Regulatory Guide OH 710-4, "Health Physics Surveys in Uranium Mills," issued for comment in August 1980

15. Draft Regulatory Guide OH 941-4, "Information Relevant To Ensuring That Occupational Radiation Exposures at Uranium Mills Will Be as Low as Is Reasonably Achievable," issued for comment in August 1980

16. SS 926-4, Proposed Revision 1 to Regulatory Guide 1.23, "Meteorological Programs in Support of Nuclear Power Plants," issued for comment in September 1980

DRAFT VALUE/IMPACT STATEMENT

1. PROPOSED ACTION

In order to process uranium ores for the extraction of natural uranium, an NRC source material license is required. General guidance for filing an application is provided in § 40.31 of 10 CFR Part 40. Regulatory Guide 3.5 was issued in February 1973 to provide specific guidance on the format and content of applications for licenses to authorize uranium milling operations. In November 1977, it was revised to reflect experience gained in actual licensing cases. Since that time, however, NRC regulations were amended based on the conclusions reached in a final generic environmental impact statement on uranium milling and the requirements mandated in the Uranium Mill Tailings Radiation Control Act of 1978, as amended. Also, based on experience gained over the past few years in the issuance of such licenses, the NRC staff has identified additional information that should be contained in applications to reflect present needs and practices. Thus, it is proposed to revise Regulatory Guide 3.5 to conform to current NRC regulations and licensing practice.

1.1 Value/Impact

1.1.1 NRC

The proposed guide sets forth the information needed by the NRC from applicants for uranium milling activities. It identifies present needs and reflects present regulatory requirements and practices. Thus, it is anticipated to result in a decrease of questions from the NRC staff to applicants, improve consistency in review of applications because of more uniform submittals, and reduce review effort of the NRC licensing staff.

1.1.2 Other Government Agencies

Other government agencies should not be affected.

1.1.3 Industry

The regulatory guide contributes to the reduction in time required for industry's preparation of a license application. Industry will spend less

time trying to interpret NRC regulations and requirements for submission of information.

1.1.4 Public

No impact on the public is foreseen.

1.2 Decision

The revision of this regulatory guide should be initiated because of the benefits previously discussed.

2. TECHNICAL APPROACH

This section is not applicable since the proposed action is procedural, i.e., revision of a regulatory guide necessitated by changes in the regulations.

3. PROCEDURAL APPROACH

3.1 Alternatives

The regulatory guide presently exists. Revision of the guide is necessary because of amendments to the regulations. The only alternative is to discontinue use of the guide altogether in favor of individual letters to licensees.

3.2 Discussion

A guide is the more effective way to transmit information about regulations and licensing requirements because it ensures uniform transmission of information to licensees. Individual letters would be inefficient and, depending on the reviewing official, may not uniformly convey the same information to each licensee. Continuance and revision of the guide is the most effective alternative.

4. STATUTORY CONSIDERATIONS

4.1 NRC Authority

This guide provides an acceptable method for implementing certain of the regulations promulgated in 10 CFR Part 40.

4.2 Need for NEPA Assessment

The proposed action is not a major action as defined by § 51.5 of 10 CFR Part 51 and does not require an environmental impact statement.

5. RELATIONSHIP TO OTHER EXISTING OR PROPOSED REGULATIONS OR POLICIES

The relationship to other regulations and regulatory guides is described in the text of Regulatory Guide 3.5.

6. SUMMARY AND CONCLUSIONS

The proposed revision to Regulatory Guide 3.5, when disseminated, will assist the NRC in its review of license applications for uranium mills. The proposed revision should be issued.

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