Texas Commission on Environmental Quality

Radioactive Material License

Pursuant to the Texas Radiation Control Act, Texas Commission on Environmental Quality, (TCEQ or commission) and Title 30 of the Texas Administrative Code (30 TAC), and in reliance on statements and representations heretofore made by the Licensee, a license is hereby issued authorizing the Licensee to receive, possess, use, store, dispose and transfer radioactive material listed below; and to use such radioactive material for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations and orders of the Texas Commission on Environmental Quality now or hereafter in effect and to any conditions specified below.

Licensee Customer Number	Licensee Name	Licensee Address	License Number	License Expiration Date	This license is issued in response to an application(s) received dated	Amendment Number 29
CN600616890	1. Waste Control Specialists LLC ATTN: Jay Cartwright	2. P.O. Box 1129 Andrews, Texas 79714	3. R04100	3.A September 10, 2024	4. August 14, 2015: Signed by Jay B. Cartwright, RSO	4.A: Issued on December 7, 2015

Radioactive Material Authorized

Land Disposal Facility

5. Radioisotope	6. Form of Material	7. Maximum Volume and Total Radioactivity	8. Authorized Use
A. Low-level radioactive waste as defined at Texas Health and Safety Code §401.004 B. Low-level radioactive waste is limited to Compact Waste and Federal Facility Waste as defined at Texas Health and Safety Code §§401.2005 and 401.207. C.Reserved. D.Reserved. E. Above ground possession of source material not to exceed 30,000,000 grams. F. Above ground possession of special nuclear material not to exceed 350 grams total of uranium-235, 200 grams of uranium-233, or 200 grams of plutonium or any combination of these provided the sum of the ratios of the quantities does not exceed unity.	A. Dry packaged low-level radioactive waste, except as authorized in this license.	A. For the Compact Waste Disposal Facility: Total volume not to exceed 9,000,000 cubic feet or total decay corrected radioactivity not to exceed 3,890,000 curies. B. For the Federal Facility Waste Disposal Facility: Total volume of federal facility waste limited to 26,000,000 cubic feet or total decay corrected radioactivity not to exceed 5,600,000 curies of totals, not more than a total volume of 8,100,000 cubic feet (or 300,000 cubic yards) and total decay corrected	A. Receipt of low-level radioactive waste from other persons for near-surface land disposal. B. Receipt is limited to Compact Waste and Federal Facility Waste as defined at Texas Health and Safety Code §§401.2005 and 401.207.

5. Radioisotope	6. Form of Material	7. Maximum Volume and Total Radioactivity	8. Authorized Use
		radioactivity of 5,500,000 curies of Class A Containerized, Class B, and Class C low-level radioactive waste, collectively.	

Storage and Processing Facility

5. Radioisotope	6. Form of Material	7. Maximum Activity	8. Authorized Use
G. Radioactive waste, by-product material as defined at Texas Health and Safety Code (THSC) Section (§) 401.003(3)(B), uranium ore received as waste, NORM waste, and/or oil and gas NORM waste	G. Solid or liquid	G. Activities per category group as specified under 30 TAC §336.1207(a), not to exceed the following: Category I: 2,000 curies; Category II: 20,000 curies; Category III: 200,000 curies; Category IV: 2,000,000 curies	G. Receipt, processing of radioactive material received as waste, in-house decontamination, interim storage, and transfer to licensed radioactive waste disposal sites, the licensed generator, exempted under 30 TAC §336.5(a) and transferred to a RCRA hazardous waste disposal facility, or return to an authorized federal agency
H. Any radioactive material	H. Sealed sources	H. Total activity not to exceed 150,000 curies.	H. Receipt, interim storage, and transfer to licensed radioactive waste disposal sites, other licensed recipients, or return to an authorized federal agency.

5. Radioisotope	6. Form of Material	7. Maximum Activity	8. Authorized Use
I. Any radioactive material	I. Solid	I. Activity for Category I as specified under 30 TAC §336.1207(a), not to exceed 33,000 curies.	I. Receipt, interim storage, of pre-packaged, stabilized dry-active waste from an authorized federal agency, and transfer to licensed radioactive waste disposal sites, or return to an authorized federal agency.

General Requirements

9. This license authorizes

   A. The disposal of low-level radioactive waste, except waste of international origin and waste specifically prohibited from disposal in accordance with THSC Chapter 401 and Chapter 336, Radioactive Substance Rules. No other material shall be accepted under this license for disposal. The licensee may not dispose of mixed low-level radioactive waste defined in 30 TAC 336.2 unless authorized by a TCEQ hazardous waste permit in accordance with 30 TAC Chapter 335. The receipt and/or disposal of spent fuel, high-level radioactive waste, by-product material, as defined in paragraph B of 30 TAC §336.2, naturally-occurring radioactive material, hazardous waste, industrial solid waste, municipal solid waste, liquid waste, explosive or pyrophoric materials are specifically prohibited, with the exception of hazardous waste that is authorized for disposal within the Federal Facility Waste Disposal Facility.

   B. The storage of any radioactive material which is waste and the processing of radioactive waste, by-product material as defined at THSC §401.003(3)(B), uranium ore received as waste, NORM waste, and/or oil and gas NORM waste.

   C. Low-level radioactive waste intended for disposal and other radioactive material intended for storage and processing shall be received, possessed, and disposed only at:

Regulated Entity Number	Location
RN101702439	9998 West Highway 176, Andrews, Texas, 79714 One mile north of State Highway 176; 250 feet east of the Texas and New Mexico State Line (30 miles west of Andrews, Texas).

10. The Licensee shall comply with the provisions of Title 30 Texas Administrative Code (30 TAC) Chapter 25; Chapter 35, Subchapter H; Chapter 37; Chapter 39, Subchapters A, H, and M; Chapter 50; Chapter 55, Subchapter G; Chapter 60; Chapter 70; Chapter 80; Chapter 281, Subchapter A; Chapter 305, Subchapters A, B, C, D, and F; Chapter 327; and Chapter 336, Subchapters A, B, C, D, E, G, H, J, and M.

11. Words and terms used in this license are defined in 30 TAC Chapter 336. The following words and terms, when used in this license, shall have the following meaning:

   A. Appropriately authorized: the activity has been formally authorized by the State or Federal agency, which has jurisdiction over the issue.

   B. Authorized Federal Agency: the United States Department of Energy (DOE) or the United States Department of Defense (DOD) without limited purpose, or the United States Environmental Protection Agency (EPA) for the limited purpose of the material derived from the decommissioning of the Gulf Nuclear of Louisiana, Inc. facilities at 202 Medical Center Boulevard in Webster, Texas and 9320 Tavenor Street in Houston, Texas, upon written, executed agreement with the Licensee that specifies that the authorized federal agency will take back and assume responsibility for all of its waste currently maintained at the Licensee's storage and processing facility within 30 days of written notification by the executive director that the waste is ready for removal, and that all associated expenses for such will be borne by the authorized federal agency to the extent that they are not covered by the Licensee's financial assurance for storage and processing. These provisions will only apply if the Licensee has failed to properly decontaminate and

decommission the storage and processing facility or otherwise failed to comply with an order of the commission or executive director.

C. Buffer Zone – A portion of the disposal site that is controlled by the Licensee and that lays under the disposal units and between the disposal units and the boundary of the disposal site.

D. Bulk Waste – Material that is soil or soil-like, debris, rubble, or a single uniform piece that is qualified for disposal under this license.

E. Canister – A rectangular or cylindrical reinforced concrete container as defined in Appendix 3.0-1 of the land disposal facility application or as subsequently approved by the Executive Director.

F. Commencement of Major Construction – Any clearing of land, excavation, or other substantial action that would adversely affect the environment of a land disposal facility. The term does not mean disposal site exploration, necessary roads for disposal site exploration, borings to determine foundation conditions, or other preconstruction monitoring or testing to establish background information related to the suitability of the disposal site or the protection of environmental values.

G. Commission – The Commissioners of the Texas Commission on Environmental Quality acting in their official capacity.

H. Compact – The Texas Low-Level Radioactive Waste Disposal Compact established under Texas Health and Safety Code §403.006 and Texas Low-Level Radioactive Waste Disposal Compact Consent Act, Public Law Number 105-236 (1998) (Texas Compact).

I. Compact Waste Disposal Facility – The low-level radioactive waste land disposal facility licensed by the commission for the disposal of Compact Waste.

J. Compact Waste – Low-level radioactive waste, as defined in §§ 401.2005 and 401.207, that is generated in Texas or a party state; or is not generated in Texas or a party state, but has been approved for importation to Texas by the Texas Low-Level Radioactive Waste Disposal Compact Commission (TLLRWDCC) in accordance with all applicable statutes, rules and procedures.

K. Containerized – To be emplaced within a canister.

L. Disposal Site – That portion of a land disposal facility which is used for disposal of waste. It consists of disposal units and a buffer zone.

M. Disposal Units – A discrete portion of the land disposal facility into which waste is placed for disposal. For near-surface disposal as authorized by this license, the disposal unit is a trench in which waste is emplaced.

N. Excavation – Those subset of activities comprising construction that involve the removal of native materials (e.g., soils) at the site for the construction of the land disposal facility features, such as, the disposal units, receiving pad, contact water storage pad, decontamination building, or any other structure.

O. Executive Director – The executive director of the Texas Commission on Environmental Quality, or any authorized individual designated to act for the executive director in the administration of the license and the rules of the TCEQ (for example, reporting, inspection, emergency response).

P. Federal Facility Waste – Low-level radioactive waste that is the responsibility of the federal government under the Low-Level Radioactive Waste Policy Act, as amended by the Low-Level Radioactive Waste Policy Amendments Act of 1985 (42 United States Code

§2021b - 2021j). Excluded from this definition is waste specifically prohibited from disposal in accordance with THSC Chapter 401 and Chapter 336, Radioactive Substance Rules.

Q. Federal Facility Waste Disposal Facility – The low-level radioactive waste land disposal facility for the disposal of Federal Facility Waste.

R. In-Cell Non-Containerized Disposal Unit (IC NCDU) - A location within a containerized disposal unit used for the disposal of bulk waste and filled using practices and methods authorized by this license.

S. Interim storage: Waste packaged in accordance with Title 49 Code of Federal Regulations (CFR), as amended, and that meets current or stated acceptance requirements for an authorized disposal facility or an authorized federal agency.

T. In transport - Radioactive and mixed wastes containing source material or special nuclear material (SNM) received by the Licensee at the land disposal facility within the controlled area or any rail spurs controlled by the Licensee and conveyed to the facility by truck or rail is “in transport” and not possessed as long as the waste containers remain on the delivery conveyance in compliance with all U.S. Department of Transportation (DOT) regulations for transport of that waste. Waste received by the Licensee may be in transport for up to 14 days. If weather or another unexpected event prevents the disposal of such waste on the day it is removed from the conveyance, that waste shipment may be placed again “in transport” for up to two days if placed onto the delivery conveyance in a manner that satisfies all DOT regulations for transport.

U. Land Disposal Facility – All land, buildings and structures, and equipment which are intended to be used for the disposal of low-level radioactive wastes into the subsurface of the land. For the purposes of the license, the term shall mean both the Compact Waste Disposal Facility and Federal Facility Waste Disposal Facility.

V. Low-Level Radioactive Waste (LLRW) – Radioactive material that is discarded or unwanted and is not exempt by a Texas rule adopted under the Texas Health and Safety Code §401.106; is waste, as that term is defined by Title 10 Code of Federal Regulations (CFR) §61.2; and is subject to: concentration limits and disposal criteria established in 30 TAC Chapter 336. Low-level radioactive waste does not include: high-level radioactive waste defined by 10 CFR §60.2; spent nuclear fuel as defined by 10 CFR §72.3; transuranic waste as defined in 30 TAC §336.2; by-product material as defined in paragraph B of 30 TAC §336.2; naturally-occurring radioactive material (NORM) waste as defined in 30 TAC §336.2; or oil and gas NORM waste.

W. Monolith – A mass constituting a single undifferentiated rigid unit (e.g. concrete-like unit generated from stabilization of in-situ grouting of waste, or single uniform piece of debris).

X. Operations – The receipt and transfer of low-level radioactive waste for disposal from other persons and/or the emplacement of low-level radioactive waste into a disposal unit and any other activities associated with the receipt and emplacement of low-level radioactive waste. A land disposal facility is in operation from the day that low-level radioactive waste is first received until the day final closure begins. This definition does not apply to the storage and processing facility.

Y. Restricted Area – 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. For the purpose of this license, areas within the land disposal facility and the storage and processing facility are designated as the Restricted Area.

Z. Site – The contiguous land area where the storage and processing facility, land disposal facility or disposal activity is physically located or conducted including adjacent land used in connection with the land disposal facility or disposal activity, and includes soils and groundwater contaminated by radioactive material. Activity includes the receipt, storage, processing, or handling of radioactive material for purposes of disposal at a land disposal facility or in the storage and processing facility.

AA. Storage and Processing Facility - All land, buildings and structures, and equipment which are intended to be used for the storage (excluding the staging of waste for disposal or waste in transport) of radioactive waste, by-product material as defined at Texas Health and Safety Code Section (§) 401.003(3)(B), uranium ore received as waste, NORM waste, and/or oil and gas NORM waste.

BB. Waste – Has the same meaning as Low-Level Radioactive Waste for the land disposal facility and as radioactive waste, by-product material as defined in Section 401.003(3)(B) of the Health and Safety Code (as amended), uranium ore, Naturally Occurring Radioactive Material (NORM) waste, and/or oil and gas NORM waste for the storage and processing facility.

CC. Waste of International Origin – Means Low-Level Radioactive Waste that originates outside of the United States or a territory of the United States, including subsequently stored or processed in the United States.

12. The following are related to the designated Radiation Safety Officer under this license:

A. The individual designated as the Radiation Safety Officer (RSO) for activities covered by this license is Mr. Jay Cartwright.
B. The RSO shall be the primary contact between the Licensee and the TCEQ for all matters relating to this license and radiation safety.
C. Any request for amendment of the license shall be submitted under the signature of the RSO.
D. The Licensee shall provide a resolution from its board of directors, attested by the secretary of the corporation that the Licensee has delegated to the radiation safety officer position the authority to act for and on behalf of the Licensee in all matters relating to radiation safety matters and this radioactive material license.
E. The Licensee shall revise an organizational chart and the description of the duties, responsibilities and authorities of the RSO submitted in the application to depict and specify that the designated RSO has a direct line of communication with the Licensee's President on all matters pertaining to radiation safety and compliance with the conditions of this license and the applicable rules.
F. The Licensee shall require and document the following minimum qualifications of any person to be designated to serve as the RSO for this license:

1) A bachelor's degree in the physical or biological sciences, industrial hygiene, or engineering from an accredited college or university or an equivalent combination of education and relevant experience in uranium recovery, waste processing, or production facility radiation protection. Two (2) years of relevant experience is considered equivalent to one (1) year of academic study.

2) At least one (1) year of work experience relevant to low-level radioactive waste management and disposal operations in applied health physics, radiation protection, industrial hygiene, or similar work. This experience should involve directly working with radiation detection and measurement equipment, not strictly administrative work. This experience should be in addition to any experience that is used to meet the educational

requirement.

3) At least four (4) weeks of specialized classroom training in health physics specifically applicable to low-level radioactive waste management and disposal operations.

4) The RSO should attend refresher training on low-level radioactive waste management and disposal operations related to health physics every two (2) years.

13. Copies of all documents and records required by this license must be maintained for the executive director's review at 9998 West Highway 176, Andrews, Texas, 79714.

14. This license may be revoked, suspended, or modified, in whole or in part, for any material false statement in the application or any statement of fact required under provisions of the Texas Radiation Control Act (TRCA), or because of conditions revealed by any application or statement of fact or any report, record, or inspection or other means that would warrant the commission to refuse to grant a license on the original application, or for failure to operate the facility in accordance with the terms of the license, or for any violation of or failure to observe any of the terms and conditions of the TRCA or other applicable law or the license or of any rule or order of the commission.

15. The Licensee must restrict possession, storage, processing, and disposal of low-level radioactive waste to the locations and purposes authorized in the license

16. The Licensee shall maintain records of the types, forms, and quantities of low-level radioactive waste and hazardous waste disposed at the site. This information shall be used during decommissioning and to update the dose modeling prior to license termination. This information shall be retained throughout disposal facility operations and throughout the closure and post-closure periods. Upon license transfer, the records of the types, forms, and quantities of low-level radioactive waste and hazardous waste disposed at the site shall be transferred to the custodial agency.

17. The Licensee must notify the executive director within seven (7) days of receipt of a citation, petition, summons, warrant or other notice of a civil, administrative, or criminal proceeding by a city, county, state, or federal authority relating to the site, land disposal facility, activities, Licensee, managers, or employees at the site. This requirement applies to a WCS employee only if such legal action was brought against the employee acting in their scope of employment for WCS and not for the employee's own personal matters.

18. The Licensee must notify the executive director within four (4)-hours of any temporary or permanent closure of the disposal facility for any emergency response event that causes the disposal site to be closed beyond the regular schedule of operation.

19. The Licensee may not transfer the real property on which the Federal Facility Waste Disposal Facility is located except to the federal government. The Licensee may not use the property on which the land disposal facilities are located as security or collateral or otherwise subject the real property to foreclosure or possession by a person who is not the state or federal government or the Licensee.

20. Upon issuance of this license, the Licensee shall convey all right, title and interest in land and buildings for the Compact Waste Disposal Facility to the State of Texas together with requisite rights of access to the property.

21. The Licensee must cease any activity authorized under this license when directed to do so by the executive director or the resident inspector as necessary to protect the public health and safety and

the environment.

22. The Licensee must submit an annual report by October 1 each year, based on the state fiscal year, to the executive director on the status of the land disposal facilities, including the facilities' projected future capacity.

23. The Licensee shall comply with all license conditions. Failure to comply with any license condition is a violation of the license and statutes under which the license is issued and is grounds for enforcement action, for license amendment, revocation, or suspension, or for denial of a license renewal application or an application for a license or permit for another facility.

24. For the purpose of coordination, communication, and efficiency of submitted document reviews, project-phased schedules for the land disposal facility shall be required to be submitted as follows:

    A. A comprehensive Pre-Construction Schedule shall be submitted to the executive director no later than 60 days from the authorized date of the approved license. The Pre-Construction Schedule shall include, but is not limited to, the requirements in the following license conditions: 20, 22, 50, 51, 56, 57, 58, 59, 60, 61, 154, 156, 159, 162, 167, 170, 171, and 183.
    B. A comprehensive Construction and Operations Schedule shall be submitted to the executive director no later than 60 days from date of authorized construction. The Construction and Operations Schedule shall include, but is not limited to, the requirements in the following license conditions: 69, 70, 71, 76, 77, 81, 82, 86, 87, 97, 99, 114, 116, 117, 118, 122, 126, 128, 132, 134, 135, 144, 156, 157, 158, 159, 162, 167, 170, 171, and 183.
    C. One (1) year from the predicted date of site closure, a Closure Schedule shall be submitted to the executive director. The Closure Schedule shall include, but is not limited to, the requirements in the following license conditions: 156, 157, 158, 159, 162, 167, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, and 183.

25. The Licensee shall note that it is not a defense in an enforcement action, that it would have been necessary to halt or reduce the licensed activity to maintain compliance with the license conditions.

26. The Licensee must take all reasonable steps to minimize or prevent any discharge, disposal, or other license violation which has a reasonable likelihood of adversely affecting human health or the environment.

27. The Licensee must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) installed or used by the Licensee to achieve compliance with the license conditions. Facility maintenance includes, but is not limited to:

    A. Caliche entrance and access roads. The licensee shall inspect caliche surfaces monthly for aggregate base loss and rutting, assess the serviceability of the caliche surfaces, and document the inspection findings and any maintenance performed.

    B. If rutting or aggregate loss is observed to be greater than 3 inches, the licensee shall place additional crushed caliche; re-grade the caliche surface; and compact the caliche to improve the serviceability of the surface.

28. The Licensee must furnish to the executive director, upon request and within a reasonable time, any information to determine whether cause exists for amending, revoking, suspending, or terminating the license, and copies of records required to be kept by the license.

29. This provision is related to indemnification of TCEQ:

    A. Upon license issuance, to the fullest extent permitted by law, the Licensee shall indemnify

and hold harmless the TCEQ and its officers, employees, agents, principals and assigns from and against all fines, penalties, claims, damages, losses, demands, judgments, settlements, punitive damages, costs of suit, attorneys' fees and delays to other contractors, whether arising in tort or otherwise, whether arising under the Texas Tort Claims Act or otherwise, and whether or not the parties are individually or jointly responsible for any damages, that arise out of or result from:

1) Work performed in connection with this license by the Licensee or any of its agents, employees, subcontractors, or suppliers or their agents or employees, whether or not such work is negligently or recklessly performed;
2) Licensee's handling of a hazardous substance or performance of an inherently hazardous activity;
3) The negligent, reckless, or intentional acts or omissions of Licensee or any of its agents, employees, subcontractors, or suppliers or their agents or employees;
4) The Licensee's failure to comply with any license requirement, covenant, warranty, or representation;
5) Any claim against the TCEQ relating to its issuing or not issuing this license, or regulatory enforcement or lack of enforcement of this license, or including or not including any terms, provisions, or requirements in this license;
6) Personal injury or bodily injury (including death) to the Licensee's own employees, contractor's, or contractors' employees, subcontractors, or subcontractor's employees, suffered as a result of the Licensee's performance or lack of performance of any activities related to this license;
7) The acts or omissions of negligence of commission or any of TCEQ's officers or employees;
8) The acts or omissions of gross negligence of any TCEQ officer or employee arising out of or in connection with the Licensee's performance of any activities related to this license; or
9) Any condition of tangible property on or related to the site, whether or not TCEQ owns or has control over the site or any of the conditions at the site.

B. This indemnity obligation shall not be apportioned according to contribution, in negligence or otherwise, but shall apply to the entire such claim, damage, loss, demand, judgment, expense, or attorney's fees, regardless of whether it is caused in whole or in part by a party indemnified hereunder (including the negligent act or omission of the TCEQ or its employees.

C. This indemnity obligation shall survive termination of the license. The Licensee must give notice to the executive director before physical alterations or additions to the licensed facility if such alterations or additions would require a license amendment or result in a violation of license requirements.

30. Authorization from the commission is required before beginning any change in the licensed facility or activity that would result in noncompliance with other license requirements.

31. Unless subject to a different reporting requirement in this license or under 30 TAC §336.335 (Reporting Requirements for Incidents), the Licensee must report any noncompliance to the executive director which may endanger human health or safety or the environment. Such

information must be provided orally within 24-hours from the time the Licensee becomes aware of the noncompliance. A written submission must also be provided within five (5) days of the time the Licensee becomes aware of the noncompliance. The written submission must contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

32. Inspection and entry must be allowed under Texas Water Code, Chapters 26 - 28 and 32, Texas Health and Safety Code §§361.032, 361.033, 361.037, and 401.063, and 40 CFR §122.41(i). The statement in Texas Water Code §26.014, that executive director entry of a facility must occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection is not grounds for denial or restriction of entry to any part of the facility, but merely describes the executive director's duty to observe appropriate rules and regulations during an inspection.

33. The license may not be transferred except on approval of the commission.

34. All reports and other information requested by and submitted to the executive director must be signed by the person and in the manner required by 30 TAC §305.128. All information submitted to the executive director must comply with the applicable requirements of the Texas Engineering Practice Act, the Texas Geoscience Practice Act, and the Texas Professional Land Surveying Practices Act.

35. This license may be amended, suspended and reissued, or revoked for cause. The filing of a request by the Licensee for a license amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any license condition.

36. This license does not convey any property rights of any sort, or any exclusive privilege.

37. Monitoring results must be provided at the intervals specified in the license.

38. When the Licensee becomes aware that it failed to submit any relevant facts in a license application, or submitted incorrect information in an application, or in any report to the executive director, it must promptly submit such facts or information.

39. At any time before termination of the license, the Licensee must submit written statements under oath upon request of the commission or the executive director to enable the commission to determine whether or not the license should be modified, suspended, or revoked.

40. The license or portion thereof will be transferred to the custodial agency only on the full implementation of the final closure plan as approved by the commission, including post-closure observation and maintenance.

41. Reserved

42. The commission may incorporate in this license at the time of issuance, or thereafter, by appropriate rule or order, additional requirements and conditions with respect to the Licensee's receipt, possession, and disposal of wastes as it deems appropriate or necessary in order to: (1) protect the health and safety of the public and the environment; or (2) require reports and recordkeeping and to provide for inspections of activities under the license that may be necessary or appropriate to effectuate the purposes of the Texas Radiation Control Act and the commission's rules.

43. Ninety (90) days prior to the receipt of federal facility waste, the Licensee must indemnify the

commission, the state, and its officers and agents for any liability imposed on the commission or state under state or federal law for damages, removal, or remedial action with respect to the land, the facility, or the federal waste accepted, stored, or disposed of. The Licensee may not receive federal facility waste until the executive director approves the indemnification in writing.

44. Notice of Bankruptcy.

A. The Licensee must notify the executive director, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of Title 11 (Bankruptcy) of the United States Code (11 USC) by or against:

1) The Licensee;

2) An entity (as that term is defined in 11 USC §101(14)) controlling the Licensee or listing the license or Licensee as property of the estate;

3) An affiliate (as that term is defined in 11 USC §101(2)) of the Licensee; or

4) Valhi, Inc.

B. This notification must indicate:

1) The name of the Licensee;

2) The License number(s);

3) The bankruptcy court in which the petition for bankruptcy was filed; and

4) The date of filing of the petition.

45. Any leases, contracts, or other arrangements between the Licensee and the commission with respect to the ownership and use of the property on which the Compact Waste Disposal Facility is located are subject to the laws of the State of Texas and are independent of the regulatory and administrative processes applicable to low-level radioactive waste disposal. By granting this license, the commission does not waive any rights with respect to the ownership and use of the property on which the Compact Waste Disposal Facility is located.

46. The Licensee shall ensure all waste received for disposal complies with the Performance Objectives specified in 30 TAC §336.723 as demonstrated by the results of a Performance Assessment conducted pursuant to license condition 89.

A. The Licensee shall not receive for disposal or dispose uranium hexafluoride.
B. Waste streams containing depleted uranium in concentrations greater than ten (10) nanocuries per gram shall be disposed at the greatest depth possible in the disposal units and may be disposed within Modular Concrete Canisters (MCC) or in the In-Cell Non-Containerized Disposal Unit consistent with procedure LL-OP-7.1 if the waste is kept inside the original metal canisters.
C. Any waste streams not classified as Class A, B, or C low level radioactive waste shall not be accepted for disposal unless authorized by the executive director.

47. The Licensee shall provide, on or near the required signs and labels, additional information, as appropriate, to make individuals aware of potential radiation exposures and ways to minimize the exposures.

48. The Licensee must use any reasonable means, including but not limited to, fencing and security personnel, to prevent unauthorized entry into the restricted area of the site. The Licensee is authorized to implement the security and fire protection system for the land disposal facility as modified in the administrative amendment application dated July 27, 2011, and in the associated amendment application revisions dated September 1, 2011, October 14, 2011, and November 4, 2011, subject to the following conditions:

    A. The Licensee shall ensure that an operational badge card reader system or an equivalent access control system is provided at all entry and exit points of the Compact Waste Disposal Facility and Federal Facility Waste Disposal Facility Decontamination and Waste Staging buildings.
    B. The Licensee may not store radioactive material quantity of concern (RAMQC) waste overnight in the Compact Waste Disposal Facility and Federal Facility Waste Disposal Facility decontamination buildings unless otherwise authorized by the executive director.
    C. The Licensee shall ensure that there are no blind spots in the motion sensing alarm field of range of the PTZ cameras when the PTZ cameras are focused on the entry/exit doors of land disposal facility buildings.
    D. When RAMQC is being stored in approved LLRW buildings the Licensee shall ensure adequate staffing is provided for continuous, dedicated visual monitoring and observation of security camera monitoring screens as described in the amendment application dated April 26, 2013 in either the Low-Level Radioactive Waste Disposal Facility gatehouse or the main site guard house, accounting for distractions caused by other duties, fatigue, and/or scheduled breaks. The Licensee shall maintain detailed operational procedures for the security camera monitoring operations.
    E. The Licensee shall develop and provide procedures that describe the precise protocols to be followed to download the recording data of the Network Video Recorder (NVR) when its capacity is approached or when a specific image is needed.
    F. Only a Trustworthy and Reliable person with Unescorted Access (TRUA) can provide escort for any RAMQC, including during disposal and offloading of this waste. The Licensee shall modify its Procedure RMP-100 sections 6.1.4 and 6.1.5 to state that only a TRUA can provide the escort for the RAMQC during these activities.
    G. The Licensee's security and surveillance system may be subject to review and inspection by TCEQ to evaluate the effectiveness of the system regarding areas illuminated by lamps and the areas covered by the cameras. This inspection may identify changes to the system that the Licensee will be required to address.
    H. The Licensee must provide a one-time written notification to TCEQ no less than two (2) weeks before the planned receipt of waste containing RAMQC at the land disposal facility. This notification shall include: plans for the increased surveillance and security for RAMQC as required in 10 CFR Part 37; plans and procedures to ensure that the waste will be disposed the same day, and contingency storage plans that satisfy 10 CFR Part 37 if, due to unforeseen circumstances, the waste must be stored overnight; and acknowledgment that the submitted plans for the increased surveillance and security must be approved by TCEQ before the waste can be received. After the one-time written notification, the Licensee shall provide a written notification to the resident inspectors no less than two (2) days before the planned receipt of waste containing RAMQC at the land disposal facility.

49. Upon submission of an application for license renewal and/or amendment, or upon the request of the executive director, the Licensee must furnish the executive director with an updated map and cross-referenced list of adjacent landowners.

50. The licensee shall remove sediment and other objects from the storm sewer system and keep the

storm sewer system free from debris. Records of this maintenance activity shall be updated monthly.

51. The licensee shall remove sediment, standing water, and other objects from the ditches surrounding the facilities and keep the ditches free from debris. Records of this maintenance activity shall be updated monthly.

52. Air Emissions Studies for Bulk Waste Disposal in the Compact Waste Disposal Facility and Federal Facility Waste Disposal Facility.

    A. Within 60 days of commencement of bulk waste disposal operations in the Compact Waste Disposal Facility and Federal Facility Waste Disposal Facilities, engineering reports must be submitted to the executive director. Reports must include an evaluation of the expected effectiveness of water spraying, with and without chemical additives, in controlling particulate air emissions from the exposed waste face in the Compact Waste Disposal Facility and Federal Facility Waste Disposal Facilities. The report must address the emissions control effectiveness during both average seasonal wind velocity and high wind velocity events taken from National Weather Service recorded data from the past 25 years for Midland/Odessa, Texas. The report must include an evaluation of the ability to apply water sprays in winds exceeding 25 miles per hour, given the tendency for wind erosion of the waste surfaces, and droplet entrainment at higher wind speeds. The evaluation must be based upon new testing, or documented performance testing under similar conditions from prior studies, which may include spraying systems manufacturers' performance data.

    B. A particulate air emissions study for the Compact Waste Disposal Facility and Federal Facility Waste Disposal Facility bulk waste operations is to include wind erosion of the exposed waste face as a mass air emissions rate factor in the air dispersion modeling. High wind velocity events are to be taken from National Weather Service data for Midland/Odessa Texas from the past 25 years, and are to be used in computing wind erosion mass air emissions for one (1)-hour, 24-hour, seven (7)-day, 30-day, and annual averaging periods. Maximum wind gusting velocities, as well as average sustained wind velocities must be considered in the analysis. Any credit taken for emissions control due to the sheltering effect of subsurface disposal must be validated by modeling, or by documented performance testing under similar conditions from prior studies. Any credit taken for emissions control by water spraying of the exposed-waste face must be consistent with the evaluation of this method provided in the license. The study must include an estimate of the total annual mass loss of Class A bulk low-level radioactive waste from the Compact Waste Disposal Facility and Federal Facility Waste Disposal Facilities, due to particulate air emissions, under anticipated average, and high wind operating conditions.

53. The Licensee shall submit a current resume listing all pertinent education, training and experience for any individual who replaces the following positions: Corporate RSO, General Manager, Director of Health and Radiation Safety, Director of Environmental, and/or any new position with similar authority and responsibility.

54. The Licensee must apply for an amendment or renewal before the expiration of the existing license in order to continue storage and processing of radioactive material after the expiration of the license. Authorization to continue such activity terminates upon the effective denial of said application. Obligations or requirements for decommissioning, environmental monitoring, financial assurance, radiation safety, and control of entry to restricted areas continue in effect beyond the expiration date of this license until the executive director notifies the Licensee in writing that the provisions of the license are no longer binding.

55. Reserved.

Land Disposal Facility Preconstruction Requirements

56. Prior to commencement of major construction, the Licensee shall submit to the executive director for review the following plans:

A. Installation of additional borings within the expanded perimeter of the Compact Waste Disposal Facility and the Federal Facility Waste Disposal Facility to provide for confirmation of unsaturated conditions. The measurement methods selected should provide for confirmation of unsaturated conditions within the buffer zone prior to construction. Should any of these measurements indicate saturated conditions, operations must accommodate additional sampling, confirmation, or testing as required by the executive director.

B. Installation of spill control (containment features such as vaults, double walled tanks, sumps, etc.) and monitoring measures (monitoring wells for groundwater and soil stations for soil) from the surface to the top of the caliche caprock around surface structures where a spill or leak could possibly occur, to facilitate remediation of possible spills. Surface structures include the decontamination building and the water storage and disposal structures, fuel tanks, storage facilities, processing structures, re-packaging areas, etc. Incorporate a plan for these controls and measures into the Radiological Environmental Monitoring Program and re-submit to the executive director for review prior to construction.

57. Prior to commencement of major construction, the Licensee shall:

A. Monitor and report to the executive director any operating changes or change of use for active oil and gas wells adjacent to the facility.

B. Verify and provide to the executive director data demonstrating the geotextile fabric materials ability to function as a filter. The ability of the geotextile fabric located between the sand filter material and the bio-barrier layer to retain its integrity during installation must be confirmed.

C. Identify and report any changes to the 100-year, the 500-year, and the Probable Maximum Precipitation (PMP) floodplains anticipated due to additional major construction or changes due to future climatic conditions described in the land disposal facility license application. The reports must be submitted for review by the executive director.

D. Verify and modify according to design changes in this license, the geographical coordinates of the area centroid and each of the four (4) corners of each proposed disposal unit using global positioning system (GPS) with sub-meter accuracy.

E. Verify the depictions of all existing and planned improvements on the site and revise the topographic maps relied upon accordingly.

F. Verify the adequacy of the leachate collection system, including but not limited to rise in hydraulic head of the drainage pipe at the center of the disposal unit in relation to the mounding equation used. Any design modification of the leachate collection system necessitated by the verification process, must use the 100-year, 24-hour precipitation event as the design basis for the leachate collection system in accordance with the land disposal facility application. The revised analysis and design must be submitted for review by the executive director.

58. Prior to commencement of major construction, the Licensee must submit modeling to demonstrate that the buffer zones established for the land disposal facility will be unsaturated at all times. The representative current and future climatic parameters in the land disposal facility license

application must be incorporated into the modeling. If hydrological conditions have changed from previous modeling, WCS will provide modeling to assure that unsaturated conditions remain in the buffer zone at all times. The modeling shall incorporate sensitivity studies and uncertainty analyses of the locations of the Ogallala-Antlers-Gatuña formation "dry line" and the Dockum Group water table.

59. Prior to commencement of major construction, the Licensee shall ensure that all applicable information submitted to the executive director is in compliance with the Texas Engineering Practice Act, the Texas Geoscience Practice Act, and the Texas Professional Land Surveying Practices Act.

60. Prior to commencement of major construction, the Licensee must:

A. Design all diversion ditches to insure at least one (1) foot of freeboard and use rock riprap to provide sufficient protection from scour.
B. Design the ledge ditches on all sides of the disposal units sized to account for the 100-year, 24-hour precipitation event.
C. The revised designs must be submitted for review by the executive director.

61. Prior to commencement of major construction, the Licensee shall ensure stormwater from the Federal Facility Waste Disposal Facility does not commingle with stormwater from the Compact Waste Disposal Facility. The Licensee's stormwater management plan should include drainage to a sedimentation pond sized to retain the 100-year storm event and an estimated volume of sediment produced by erosion over a ten (10) year period. The adequacy of the various stormwater conveyances must be evaluated and submitted for review by the executive director.

62. Reserved

63. Reserved

64. Reserved

65. Prior to commencement of major construction, the Licensee shall submit preliminary construction documents for review by the executive director, specifically no later than 120 days prior to the planned commencement of facility construction. The licensee shall submit final construction documents to the executive director no later than 60 days prior to the planned commencement of facility construction. The executive director may waive the 60-day requirement and approve final construction plans within the 120-day period. Construction may not commence without the prior written approval of the executive director. Construction documents shall include, but are not limited to, all final design plans, elevations, and detail drawings; all final written design specifications and supporting calculations; all equipment vendor data sheets and drawings; all materials specifications and data sheets; construction schedules; construction quality assurance plans; engineering reports addressing compliance with applicable design codes and standards; and any other documents related to the construction of the facility.

Construction documents shall address, but are not limited to, the following aspects of the facility:

A. Design and configuration of the Compact Waste Disposal Facility disposal units and Federal Facility Waste Disposal Facility disposal units;
B. Design of interim and final covers, including vegetative layers, for the Compact Waste Disposal Facility disposal units and Federal Facility Waste Facility disposal units;
C. Disposal facility site grading plan, including topographic maps, surface water diversion

structure, and stormwater control features;

D. Engineering evaluation of rainwater capture under anticipated 24-hour, 100-year precipitation event and expected accumulation rates as static liquid head over the primary liners, based upon the design of the leachate collection, detection, and removal systems, as applicable for the Compact Waste Disposal Facility disposal units and Federal Facility Waste Disposal Facility disposal units; and

E. Design and re-location of any waste staging building, including all equipment and facilities to be installed within the building.

Land Disposal Facility: Site Design and Construction Requirements

66. The base of the disposal units within the Federal Facility Waste Disposal Facility must have a final elevation of no lower than 3,355 feet mean sea level. The base of the disposal units is the lowest point at which waste will be disposed.

67. The Licensee shall maintain an individual buffer zone for both the Compact Waste Disposal Facility and the Federal Facility Waste Disposal Facility in a lateral perimeter of at least 100 feet around all disposed waste and under the lowest point of disposed waste of adequate size to allow monitoring for early detection of releases and to allow for remediation, if necessary. In the event that saturated conditions are detected in the buffer zone, the Licensee shall cease all waste disposal operations and notify the executive director immediately.

68. Reserved.

69. The Compact Waste Disposal Facility and Federal Facility Waste Disposal Facility design and construction shall be in accordance with the land disposal facility application and specifications as modified by this license, and any applicable conditions of this license.

70. During excavation and construction of the disposal site, the Licensee shall provide weekly written reports and photographs to accommodate the executive director's inspection and observation of all excavation and construction activities and include a discussion of future construction activities. Particular attention must be directed to fractures, faults, any evidence of collapse features or groundwater flow, or unanticipated geologic features encountered. The Licensee shall cease excavation and construction when directed to do so by the executive director in order to sample, verify, or test. The following shall be conducted during excavation and construction:

A. Topographic surveys of the elevations of the top of Dockum Group shall be conducted on a twenty (20)-foot grid during excavation and shall include elevation measurements of that surface on all perimeter vertical faces at five (5) foot intervals. An elevation map of the top of Dockum Group surface shall be created from these measurements and submitted for review by the executive director no later than 30 days prior to clay liner installation.

B. Topographic data shall be provided in electronic and written format.

C. Upon observation of fractures and other geologic structural features of significance during excavation of the Compact Waste Disposal Facility and/or Federal Facility Waste Disposal Facility, the executive director may require performance of geologic mapping at specified locations by WCS within 24 hours.

71. During excavation and construction of the disposal site, the Licensee shall perform geotechnical studies, sampling, and laboratory analysis, and allow for observation by the executive director, to verify original geotechnical conditions by continuously monitoring parameters and features including, but not limited, to: soil moisture, bearing capacity, slope stability, and permeable soil stringers as construction progresses. The Licensee shall report verification results to the executive

director and provide certification of geotechnical studies by a qualified geotechnical professional. The Licensee shall cease excavation and construction when directed by the executive director in order to sample, verify, or test.

72. The Licensee must conduct water-level elevation measurements quarterly, including during excavation and construction, on all wells within the site boundary completed in the Ogallala-Antlers-Gatuña formation, and report, in writing, these elevations to the executive director within ten (10) days following the last day of the quarter, to monitor movement in the Ogallala-Antlers-Gatuña formation "dry line" as presented in the land disposal facility application. If the water level elevations are at or higher than the top of the Dockum Group for two (2) consecutive quarters, daily measurements or continuous data recordings for the water levels shall be required as requested by the executive director.

A. Reserved.
B. Within one day of encountering saturation during excavation, resulting in observed free-standing groundwater, notification will be provided to the executive director.
C. The observation and measurements related to the presence of groundwater must be incorporated into the performance assessment modeling as required by License Condition 89.

73. The Licensee shall verify input parameters during excavation of materials and construction of disposal unit liners and covers of the infiltration computer models, HELP and VS2DI. Any revised analysis must be reviewed by the executive director. In addition, the following information is required:

A. Submit a field sampling investigation and classification of the soils at the site. The results should indicate which of the descriptions given in the land disposal facility application match these soils. The Licensee shall also provide an investigation on whether the Ranch House Draw is integrated with Monument Draw, as indicated in the floodplain report, or not integrated, as indicated in the Surficial Geology Report. Results from these investigations should be incorporated into updated Floodplain and Surficial Geology reports.
B. Submit an updated floodplain report showing changes to the 100-yr, 500-yr, and Probable Maximum Precipitation (PMP) anticipated as a result of future climatic conditions described in the land disposal facility license application. In developing the precipitation events, the licensee shall utilize precipitation records from areas similar to those forecasted for in the land disposal facility license application and the report required before commencement of major construction identifying any changes to the 100-year, the 500-year, and the Probable Maximum Precipitation (PMP) floodplains anticipated as a result of future climatic conditions described in the license application.
C. To minimize the potential for the introduction of water into the Ogallala-Antlers-Gatuña formation from the bench of the disposal unit, the Licensee must take precautions to minimize precipitation or runoff from the bench entering any active disposal unit. Exposed portions of the Ogallala-Antlers-Gatuña formation or Dockum sandstone/siltstone located within the drainage channel created by the bench of the disposal unit shall be temporarily sealed by material equivalent or superior to the specifications as applied to the disposal facility liner. Catch basins on the bench of the disposal unit shall be temporarily sealed by a geomembrane, concrete liner, or technologically equivalent material. These temporary liners shall remain fully functional until the final cover is applied, at which time the Ogallala-Antlers-Gatuña and permeable layer of the cover are to be hydraulically connected. All red bed bench liner construction shall be completed before the beginning of waste emplacement.

D. Submit a quantitative Surface Water Management Plan within 100 days of the commencement of major construction.

74. Disposal units under construction and partially filled units must be bermed to prevent water from entering the disposal unit. Low-level radioactive waste may be placed into disposal units with standing water as long as standing water is not in or around the immediate vicinity of waste placement activities.

75. All changes to the Compact Waste Disposal Facility and Federal Facility Waste Disposal Facility design must be submitted under the seal of a Texas Registered Professional Engineer and authorized by the executive director. The executive director will review all the requests submitted by the Licensee for changes to the operations and facilities. The commission may approve the changes by amending the license, as necessary.

76. The Licensee must obtain written authorization from the executive director prior to changing, adding, or deleting the codes and standards used for the design and construction of the facility as listed in the land disposal facility license application.

77. The Licensee must use American Water Works Association (AWWA) D102-06 for the inside coating and cathodic protection of all the leachate tanks serving the Compact Waste Disposal Facility and the Federal Facility Waste Disposal Facility.

78. The Licensee must provide additional thickness to the native conditioned layer in the evapotranspiration cover in order to support vegetation and store water as well as provide long term stability and protection from erosion. The revised cover design must be submitted for review by executive director prior to construction.

79. A minimum density of 85 percent (%) of the standard Proctor maximum dry density is specified for the native fine material layer in the evapotranspiration cover. The Licensee must specify a maximum density to ensure that the layer is not too dense to inhibit plant growth, including deeper rooted plants.

80. Any precipitation falling on the land disposal facility must be managed and monitored under all applicable state and federal requirements, including 30 TAC §336.359, Appendix B, Table II. Discharges leaving the land disposal facility may not exceed the values in Table II, 30 TAC §336.359, Appendix B.

81. The Licensee must measure hydraulic conductivities of the performance cover by taking at least one (1) measurement performed per 100 cubic yards of fill material. The Licensee must also measure standard density of the performance cover by taking at least one (1) measurement performed per 200 cubic yards of fill material.

82. The Licensee must adhere to the design bases listed for all applicable design features and structures.

83. Sixty (60) days prior to the receipt of waste for disposal in the applicable disposal unit, the Licensee shall provide a final geotechnical report and record, or “as-built”, construction drawings for review by the executive director. A Registered Professional Engineer licensed to practice in Texas shall certify that the applicable disposal unit has been constructed in accordance with the land disposal facility license application and the conditions of this license, or as amended. Any deviation in the record drawings from the design and construction proposed in the land disposal facility license application, and in the license as amended, must be explained and submitted under the seal of a Texas Registered Professional Engineer for review by the executive director. Deviations may require an amendment of this license.

84. Reserved.

85. If a water level is found to exist in any well(s) on the site considered previously dry (unsaturated), the executive director must be notified within ten (10) days of the observed saturation date.

86. Any modifications or alterations to natural or engineered surface water drainage conditions within the land disposal facilities; or modifications or alterations to drainage facilities otherwise incorporated in this license, must be submitted and approved by the executive director.

87. The Licensee shall design and construct the Compact Waste Disposal Facility to minimize groundwater infiltration and mitigate impact from the remaining portion of the small playa located on the eastern edge of the Compact Waste Disposal Facility.

88. The Licensee must verify that the hydraulic conductivity used in technical specifications is representative of the native fine material layer. Specifications must be verified by measurement during construction.

Land Disposal Facility Receipt, Acceptance, and Inspection Requirements

89. Prior to accepting waste and by June 30 of each year thereafter, the Licensee shall conduct an updated performance assessment, consistent with the Performance Assessment Maintenance Plan, and provide the updated performance assessment to the executive director for review to demonstrate that performance objectives of 30 TAC Chapter 336 Subchapter H will be met. The updated performance assessment shall incorporate the conditions of this license, include the most current waste characterization data, and demonstrate compliance with the performance objectives of 30 TAC §336.723:

A. In demonstrating compliance with the performance objectives, the updated performance assessment shall provide for the use of a more realistic and flexible dose modeling code, such as GoldSim, and site-specific estimates of the magnitudes and the variability in the models or codes to provide a greater level of confidence in the results. The use of models or codes should be consistent with the site conceptual model and be capable of addressing the inherent complexity at the site. Any subsequent data collected at the site shall be utilized in the code as well as any other parameters required by the code that were not previously submitted.

B. The updated performance assessment shall address all plausible release and accident scenarios as they relate to the performance objectives including, but not limited to, protection of individuals from releases after closure, protection of workers and the public during normal operations and from accidents, protection of individuals from inadvertent intrusion, and long-term stability of the disposal site after closure. The accident scenarios must be submitted for review by the executive director prior to initiating revision of the performance assessment.

C. The updated performance assessment must evaluate the impacts or activities of nearby facilities, including any off-site surface impoundments or water management retention/detention ponds required by this license, to ensure that the performance objectives of 30 TAC §336.723 will continue to be met after closure.

D. The updated performance assessment must evaluate the impact on the performance assessment of saturating the drainage layer in the cover in the event of future water level increases in the Ogallala-Antlers-Gatuña formation. The Licensee must provide, for review and approval, a two-dimensional infiltration model capable of simulating saturated conditions within the drainage layer of the cover. This simulation should consider future predicted conditions of a wetter climate and a degraded (i.e., more conductive) performance layer. Sensitivity analyses should be performed and submitted for review and approval.

E. The annual performance assessment report must be prepared in accordance with the approved Performance Assessment Maintenance Plan. The annual updates must be based on changes of conditions, assumptions, received source term, or any information needed to benchmark against the original performance assessment, the collection and refinement of existing and new data, refinement of assumptions or the refinement or replacement of models in order to minimize uncertainty in the dose modeling results.

F. Performance assessment reviews, whether done as part of the annual update or amendment request, may require the Licensee to submit additional data to support the performance assessment at any time upon request of the executive director. Sensitivity and uncertainty analyses shall be performed and submitted upon request of the executive director.

90. The Licensee shall not commingle compact waste and federal facility waste. The Compact Waste Disposal Facility and Federal Facility Waste Disposal Facility must have separate receipt, acceptance, and disposal units. Compact waste may only be received, accepted, and disposed in the Compact Waste Disposal Facility. Federal facility waste may only be received, accepted, and disposed in the Federal Facility Waste Disposal Facility. Waste that is to be disposed of at the licensee's RCRA Subtitle C landfill shall not be received or accepted at the Compact Waste Disposal Facility and Federal Facility Waste Disposal Facility. Waste shipped to the Compact Waste Disposal Facility or the Federal Waste Disposal Facility that requires dewatering, void filling, or utilization of the irradiated hardware transfer system may be off-loaded, dewatered, and/or void filled at the LSA pad prior to disposal.

91. Prior to accepting federal facility waste, the Licensee must provide an agreement signed by the Secretary of the United States Department of Energy, and acceptable to the executive director, that the federal government will assume all right, title, and interest in land and buildings for the disposal of federal facility waste.

92. Reserved.

93. No shipment may be accepted for disposal at the Compact Waste Disposal Facility unless it has been inspected by the executive director's resident inspector or other qualified TCEQ staff. For waste intended for disposal at the Compact Waste Disposal Facility, waste acceptance is triggered by the final approval of the specific waste shipment by the executive director's resident inspector.

94. Prior to accepting waste for disposal, the Licensee must provide updated, detailed procedures for receipt, inspection, and tracking of onsite waste; for acceptance of large package waste shipments; rejection and return of unacceptable packages; and verification of waste packages and bulk waste at the Compact Waste Disposal Facility or the Federal Facility Disposal Waste Facility. The procedures must specify a minimum frequency of testing to verify package contents. The procedures must be submitted for review by the executive director before waste shipments are accepted. Prior to acceptance of waste, the Licensee shall submit detailed procedures for rejection and return of unaccepted waste.

95. Prior to accepting any waste at the Compact Waste Disposal Facility, the waste must meet requirements found in Attachment C of this license, *Compact Waste Disposal Facility Waste Acceptance Criteria.* Prior to accepting any waste at the Federal Facility Waste Disposal Facility, the waste must meet waste acceptance criteria provided in this license as approved by the executive director.

96. The Licensee, during the operational period, shall maintain records of the types, forms, and quantities of radioactive waste and hazardous waste disposed at the land disposal facility, including waste profiles, waste manifests, and any additional waste shipment information. This information shall be used during decommissioning and to update the dose modeling. This information must be

retained on-site throughout the operating life of the land disposal facility and upon license transfer, transferred to the custodial agency. The Licensee shall provide monthly site receipt and disposal activities reports of waste receipts and dispositions no later than the seventh (7th) day of the following month to the executive director compiled by quantity and radioactivity.

97. The Licensee may not accept any waste by rail that is intended for disposal at the Compact Waste Disposal Facility or the Federal Facility Waste Disposal Facility unless the Licensee follows all applicable Facility Operating Procedures, Radiation Safety Procedures, ALARA (as low as reasonable achievable) Program, Quality Assurance Plan, and Waste Acceptance Procedures and Plans as provided in the land disposal facility application.

98. The Licensee may not accept low-level radioactive waste for storage at the land disposal facility or disposal unless the shipper of low-level radioactive waste has given the Licensee written notice of the shipment at least five (5) days before shipment to the Compact Waste Disposal Facility or the Federal Facility Waste Disposal Facility. The Licensee shall notify the executive director upon receiving written notification of any waste shipment, including the scheduling of any waste shipment for acceptance for disposal. Staging and managing waste disposal activities are specifically and expressly limited to areas authorized under Radioactive Material License R04100 for staging or managing waste intended for disposal.

99. Throughout the operational period, the Licensee shall provide an updated stored inventory report of any stored waste intended for disposal in the Compact Waste Disposal Facility or the Federal Waste Disposal Facility to the executive director each calendar quarter including an explanation of the planned disposal.

100. The Licensee,

A. For the land disposal facility, must follow all applicable Facility Operating Procedures, Radiation Safety Procedures, ALARA (as low as reasonably achievable) Program, Quality Assurance Plan, and Waste Acceptance Procedures and Plans as provided in the land disposal facility application. The Licensee may revise these procedures, programs and plans upon executive director review and written approval. Documentation of all such approvals, modifications and the corresponding internal review shall be maintained and available for inspection at the licensed facility for a minimum of 5 years.
B. For the storage and processing facility, in accordance with the storage and processing facility application dated January 24, 1997, the Licensee may only modify the following procedures: Operations Procedures; Occupational Health and Safety Procedures; Quality Assurance Procedures; Emergency Procedures; Laboratory Procedures and/or Radiation Safety Procedures. All modifications shall provide at least equivalent levels of radiation safety and administrative control. Documentation of all modifications, and the corresponding internal review, shall be maintained for inspection for a minimum of 5 years.

101. The Federal Facility Waste Disposal Facility may only accept mixed low-level radioactive waste, as defined in 30 TAC Chapter 336, in compliance with 40 CFR Part 268 (Land Disposal Restrictions). This license does not authorize the processing, treatment, storage, or disposal of hazardous waste.

A. Prior to accepting waste for disposal in the Federal Facility Waste Disposal Facility, the Licensee shall submit a plan that demonstrates how the requirements of 30 TAC Chapter 335 (Industrial Solid Waste and Municipal Hazardous Waste) will be met.
B. The Licensee may not store, process, or dispose of mixed low-level radioactive waste defined in 30 TAC §336.2 unless authorized by a TCEQ hazardous waste permit in accordance with 30 TAC Chapter 335.

102. Reserved.

103. The Licensee is authorized to accept soil and soil-like bulk low-level radioactive waste for disposal at the Federal Facility Waste Disposal Facility IC NCDU, and Compact Waste Disposal Facility IC NCDU only if it meets all of the following criteria.

A. The authorized location for the Federal Facility Waste Disposal Facility IC NCDU is the northeast corner of Phase 1A. The Federal Phase 1A IC NCDU shall be bounded by the north and east concrete barrier side walls. The authorized location for the Compact Waste Disposal Facility IC NCDU is the northeast corner. The Compact IC NCDU shall be bounded by the north concrete barrier sidewall**.**

B. The waste is soil and soil-like Class A low-level radioactive waste as defined by 30 TAC §336.362(a) (2) and in accordance with 30 TAC §336.733(b).

C. Soil and soil-like waste must exhibit acceptable fines content and plasticity characteristics as determined by using American Society for Testing and Materials (ASTM) method D2487, current version; and as defined by Table 103. Soil and soil-like waste with fines content greater than thirty-five percent (35%) and medium to high plasticity shall not be disposed of as non-containerized waste in either IC NCDU.

D. Soil and soil-like waste having fines content greater than thirty-five percent (35%) and non-plastic to low plasticity per ASTM D2487 shall be disposed of in combination with other acceptable soil and soil-like material as specified in Table 103.

E. Soil and soil-like waste having fines content greater than 10 percent (10%) but less than or equal to thirty-five percent (35%) and medium to high plasticity per ASTM D2487 shall be disposed of in combination with other acceptable soil and soil-like material as specified in Table 103.

F. The mixing and testing of soil and soil-like waste to meet the requirements of Table 103 shall occur prior to receipt or within the active waste management area of the IC NCDU at the Federal Facility Waste Disposal Facility and Compact Waste Disposal Facility. Soil and soil-like waste shipments which are unacceptable for bulk waste disposal according to Table 103 may be received and disposed of in concrete canisters. Soil and soil-like waste shipments which are eligible for mixing according to Table 103 may be:

1) received and disposed of in concrete canisters; or

2) received for management and subsequent disposal in the IC-NCDU. The waste may not be placed in an IC-NCDU disposal lift until the shipment has been mixed in accordance with Table 103 within the active waste management area of the IC-NCDU; and tested in to meet the disposal requirements for bulk soil and soil-like waste.

G. The average, in-place organic content of the waste does not exceed five percent (5%) and the average, as received organic content of any individual soil or soil-like waste shipment does not exceed ten percent (10%) by using ASTM D-2974.

H. The average, in-place debris and rubble content of the waste do not exceed five percent (5%).

I. Dose rates for the waste are less than 100 millirems per hour at 30 centimeters.

Table 103. Soil Acceptance and Mixing for Disposal in In-Cell Non-Containerized Disposal Unit

		Fines Content per ASTM D2487 (Current Version)		
		0-10%	10-35%	Greater Than 35%
Plasticity per ASTM D2487 (Current Version)	Nonplastic to Low Plasticity	May be disposed of "as is" or in combination with other higher fines content materials	May only be disposed of "as is"	One (1) unit by volume of this material may only be disposed of if mixed with four (4) units by volume of non-plastic or low plasticity material with 0-10% fines content
	Medium to High Plasticity	May only be disposed of "as is"	One (1) unit by volume of this material may only be disposed of if mixed with four (4) units by volume of non-plastic or low plasticity material with 0-10% fines content	Not acceptable for disposal as bulk waste

104. The licensee is authorized to dispose of rubble and debris bulk low-level radioactive waste at the Federal Facility Waste Disposal Facility and Compact Waste Disposal Facility only if it meets all of the following criteria.

A. The authorized location for the Federal Facility Waste Disposal Facility IC NCDU is the northeast corner of Phase 1A. The Federal Phase 1A IC NCDU shall be bounded by the north and east concrete barrier side walls. The authorized location for the Compact Waste Disposal Facility IC NCDU is the northeast corner. The Compact IC NCDU shall be bounded by the north concrete barrier sidewall.
B. The waste is debris and rubble Class A low-level radioactive waste as defined by 30 TAC §336.362(a)(2) and in accordance with 30 TAC §336.733(b).
C. The average, in-place organic content of the waste does not exceed five percent (5%) and the average, as received organic content of any individual waste shipment does not exceed ten percent (10%) by using ASTM D-2974.
D. The average, in-place soil or soil-like content of the waste does not exceed five percent (5%).
E. The separation of debris and rubble from soil and soil-like bulk waste shall occur prior to receipt or within the active management area of the IC NCDU at the Federal Facility Waste Disposal Facility and Compact Waste Disposal Facility. Bulk waste shipments that cannot be segregated to meet the five percent (5%) average soil or soil-like waste criteria must be disposed within concrete canisters.
F. Monoliths may be considered a structurally stable waste form.
G. The volume of pipes longer than three feet contained in debris and rubble bulk waste which are not completely filled with grout or crushed to the extent practicable shall be limited to thirty five percent (35%) in a waste stream for pipes greater than three (3) inches in diameter. Pipes which are larger than nine (9) inches in diameter shall be removed from

debris and rubble waste, filled with grout and disposed of as a monolith, or crushed.

H. Dose rates from the waste are less than 100 millirems per hour at 30 centimeters.

105. In addition to the following requirements, disposal of soil and soil-like bulk waste in the Federal Facility Waste Disposal Facility IC NCDU and the Compact Waste Disposal Facility IC NDCU must comply with the applicable rules, including 30 TAC §336.362(b)(2).

A. Soil and soil-like waste shall be placed in loose lifts no thicker than one (1) foot. Incoming soil and soil-like waste containers shall be unloaded directly on to the lift area whenever possible.

B. Soil and soil-like waste will be compacted to ninety-five percent (95%) of Standard Proctor maximum density with moisture between minus two and plus two percent (±2%) of optimum per American Society for Testing and Materials (ASTM) D698.

C. Density actually achieved will be determined with in-place density and water content nuclear gauge measurements per ASTM D6938 at the rate of three (3) nuclear gauge measurements per 5,000 square feet placed and compacted within a given lift but not less than one (1) such measurement per lift.

D. The nuclear gauge shall be licensed and operated under the Texas Department of State Health Services Radiation Control Program requirements. The nuclear gauge shall be calibrated per the manufacturer's requirements. Quality assurance density tests will be performed using the standard calibration block and the nuclear gauge in accordance with ASTM D6938.

E. If in-place density and water content nuclear gauge measurements do not meet the required compaction under ASTM D698, the Licensee shall re-compact the deficient waste disposal lift and repeat verification testing until density requirements are met.

F. The Licensee shall minimize, as prescribed in this license, the volume of debris or rubble bulk waste that is intermingled with soil and soil-like bulk waste. In placement operations, the volume of debris and rubble intermingled with soil and soil-like materials shall not exceed a volume which prevents in-place density and water content measurements by nuclear gauge.

G. Compaction of soil or soil-like bulk waste using hand-operated tools or equipment is not authorized under this license.

H. The Licensee must submit a quarterly report to the executive director verifying soil and soil-like bulk waste 95% Standard Proctor compaction requirements are met. The report shall contain the laboratory optimum water content and maximum dry unit weight, the 95% Standard Proctor density, and the corresponding nuclear gauge water content and density test results for each soil and soil-like lift.

106. Disposal of debris and rubble bulk waste in the Federal Facility Waste Disposal Facility IC NCDU and Compact Waste Disposal Facility IC NCDU must comply with 30 TAC §336.362(b)(2); and must meet the following requirements.

A. Debris and rubble waste shall be placed in loose lifts no thicker than five (5) feet. Incoming debris and rubble waste containers shall be unloaded directly on to the lift area as appropriate, or within the IC NCDU staging area.

B. Voids in debris and rubble waste shall be backfilled with concrete. The concrete mix shall be designed to have a minimum compressive strength of 2,000 pounds per square inch (psi). The concrete strength shall be tested and confirmed for each lift using ASTM C31 and C39 field quality control.

C. If concrete fails the strength test, backfilling shall cease. The Licensee shall not resume backfilling until concrete strength field quality requirements under ASTM C31 and C39 are met.

D. The Licensee shall minimize the volume of soil or soil-like bulk waste that is intermingled with debris and rubble bulk waste. In placement operations, the volume of soil and soil-like

waste intermingled with debris and rubble shall not exceed a volume which inhibits the backfilling and encasement of debris and rubble with concrete.

E. The Licensee must submit a quarterly report to the executive director verifying debris and rubble bulk waste concrete backfill compressive strength requirements are met. The quarterly report shall include concrete strength test results per ASTM methods C31 and C39 for each debris and rubble lift.

107. The following provisions are related to potential weather conditions:

A. The placement of lifts of soil-like waste is prohibited if the ambient air temperature is less than 32 degrees Fahrenheit;
B. Once weather conditions return that allow current placement operations to resume, supplemental in-place density and water content nuclear gauge measurements will be performed on soil and soil-like waste lift areas already placed before further placement of waste is undertaken; and
C. Emplaced bulk soil and soil-like waste will be re-compacted, should supplemental nuclear gauge measurements indicate unacceptable compaction after freezing conditions cease.

108. Void spaces within the bulk waste must be reduced to the extent practicable through all the following actions:

A. Voids shall be eliminated by compaction or backfilled.
B. Soil and soil-like waste shall be placed in loose lifts no thicker than one (1) foot.
C. Voids in every lift of soil and soil-like waste shall be backfilled with granular soils.
D. Each lift of soil and soil-like waste, including backfill, shall be compacted to at least ninety-five percent (95%) of Standard Proctor maximum density with moisture between minus two and plus two percent (±2%) of optimum per American Society for Testing and Materials (ASTM) D698.
E. Debris and rubble waste shall be placed in loose lifts no thicker than five (5) feet.
F. Voids in every lift of debris and rubble waste shall be backfilled with concrete. The concrete mix shall be designed to have a minimum compressive strength of 2,000 pounds per square inch (psi) per ASTM C31 and C39 for field quality control.

Radiation Safety Requirements

109. Reserved

110. The Radiation Safety Officer (RSO) will designate radiation workers authorized to handle radioactive material. All radiation workers must successfully complete a radiation safety course that has been submitted for review by the executive director. Documentation verifying successful completion of the training for authorized workers will be maintained by the licensee for inspection by the executive director.

111. Written procedures incorporating operating instructions and appropriate safety precautions for licensed activities must be maintained and available for inspection at the licensed facility. The written procedures established must include the activities of the radiation safety program, the employees training program, operational procedures, analytical procedures and instrument calibrations.

112. The Licensee shall implement the Consolidated Emergency Response Plan, ERP-100, as revised, approved by TCEQ letter dated July 9, 2013. Execution of the plan shall include records of any required training, quarterly communication checks at intervals not to exceed three months and

biennial onsite exercises. Critiques of exercises shall evaluate the appropriateness of the plan, emergency procedures, facilities, equipment, training of personnel, and overall effectiveness of the response. Deficiencies found by the critiques shall be corrected, and copies of those changes retained for executive director inspection.

113. Reserved.

114. The Licensee will document and maintain records of all accidental or unplanned releases of low-level radioactive waste during operations at the facility. Documentation of the events must be maintained for inspection until the site is transferred to the custodial agency.

115. In the event of an accidental or unplanned release of low-level radioactive waste, the Licensee must implement the Consolidated Emergency Response Plan, ERP-100, as revised, approved by TCEQ letter dated July 19, 2013 and provide immediate notification to the executive director.

116. Records produced by the Quality Assurance and Quality Control programs must be reviewed by the Quality Assurance Manager, or his qualified delegate/designee, at least annually. Deficiencies in the Quality Assurance and Quality Control program must be identified, documented, and corrected promptly. Records related to deficiencies must be available to the executive director upon request.

117. The Licensee may not use nuclear density gauge equipment for soil compaction testing without an appropriate license. Only authorized Licensees may perform the required compaction testing needed for compliance to the rules for surface compaction and moisture measurements. This license does not provide regulatory authorization for use and possession of nuclear density gauge equipment.

118. The Licensee must provide an orientation and safety program for visitors and contractors and issue dosimeters before allowing entrance into the Restricted Area. The Licensee shall maintain and document compliance with the orientation and safety program for visitors and contractors.

119. The licensee must conduct an internal monitoring program for intakes of radionuclides as follows:

A. The licensee must conduct a bioassay (in vivo and/or in vitro) for all employees or workers including but not limited to WCS employees and TCEQ Resident Inspectors prior to their initial entry into the Restricted Area. Employees or workers entering the restricted areas are also required to have a whole body count annually and for-cause. WCS shall also make every reasonable attempt to perform a whole body count for employees or workers that have entered any restricted area upon termination of employment. The whole body counts shall be conducted at the Carlsbad Environmental Monitoring and Research Center (CEMRC) facility at New Mexico State University (NMSU) in Carlsbad, New Mexico or equivalent facility.

B. Reserved.

C. The Licensee must rely on engineering controls to the extent practicable to minimize the levels of airborne radioactivity released to work areas within the Restricted Area.

D. Personal air monitoring (personal air samplers) must be provided by the Licensee for each individual who is admitted into any designated area within the Restricted Area. This monitoring shall be supplemented as appropriate with other air monitoring techniques, such as high-volume grab samples, portable samplers, and stationary, continuous air samplers.

E. Respiratory protection must be provided by the Licensee as prescribed by 30 TAC336.321 for individuals admitted into any designated area within the Restricted Area. The respiratory protection program shall also include the following procedures:

1) Air monitoring;

2) Personnel breathing zone monitoring;
3) Medical surveillance;
4) Respiratory protection program audits;
5) Maintaining breathing quality;
6) Training on the use of respirators;
7) Fit testing;
8) Respirator selection;
9) Inventory and control;
10) Storage and issuance;
11) Maintenance, repair, testing, and quality assurance;
12) Record keeping; and
13) Period of respirator use and relief from respirator use.

F. For any individual who performs work (including inspections) within any designated area within the Restricted Area for which respiratory protection is required, the Licensee must conduct bioassays (in-vivo and/or in-vitro) for cause for any personnel whose job specific personal air sample exceeds 12 Derived Air Concentration (DAC) hours taking into account the respiratory protection factor. An analysis or evaluation of these bioassay data and measurements shall be required for the radionuclides known or suspected to be present in the waste streams.

G. The Committed Effective Dose Equivalent assigned to individuals by the Licensee shall be based on the concentrations of radioactive materials in air, the quantity of radionuclides in the body or excreted from the body, or a combination thereof following written procedures and as specified in 30 TAC 336.308.

120. The Licensee must submit an annual report by March 31st of each year for the previous year summarizing monitoring results for all individuals including, but not limited to, site workers, contractors, and TCEQ staff, as applicable. If any bioassay result exceeds ten percent (10%) of the occupational dose limit provided in 30 TAC Chapter 336, the Licensee shall notify the executive director within 30 days of receiving the results.

121. The Licensee must comply with the following regarding training and operations:

A. Visitors to Compact Waste Disposal Facility or Federal Facility Waste Disposal Facility shall be escorted by personnel trained in the facility's safety procedures. A maximum of five (5) visitors may be escorted by a single trained person.

B. All clerical and office support staff shall be given safety training which may be an abridged version of that given to operations personnel. If anyone (1) of these employees transfers to other duties, the employee shall be given appropriate radiation safety training for his or her new assignments.

C. All female employees shall be given instruction concerning prenatal radiation exposure.

D. The Licensee shall make a record of the training provided to all of the above. The record shall indicate the name of the individual receiving the training or instructions, the date the training or instruction is provided, the results of examinations for course material retention,

and the name of the training course provider or instructor.

122. The Licensee must comply with the following regarding personnel dosimetry:

A. The Licensee must provide personnel dosimetry, Thermoluminescent dosimeters (TLDs) or optically-stimulated luminescence dosimeters (OSLs), to all employees and contractors who enter any restricted area at the land disposal facility or the storage and processing facility. Dosimeters must be worn by all employees and contractors who enter the restricted area. Workers who have undergone medical diagnostic or therapeutic procedures and have made this declaration to the RSO shall be restricted from entering the restricted area as prescribed per RS-2.2.0, External Dosimetry Program.

B. Reserved.

C. The Licensee shall comply with the following regarding the storage of dosimeters issued to employees when the dosimeters are not in use:

1) The Licensee shall provide a place for storage of dosimeters issued to personnel when personnel exit the restricted area;

2) The place for storage of issued dosimeters (when not in use) shall be in an area determined to be of natural-background radiation;

3) A control dosimeter shall be located in the issued dosimeter storage area; and

4) The control dosimeter for the issued dosimeter storage area shall be exchanged and processed at the same frequency as the dosimeters issued to personnel.

123. The laboratory conducting the bioassays must be National Environmental Laboratory Accreditation Conference (NELAC) certified. The laboratory's quality assurance program must be submitted for review in writing by the executive director.

124. Employees working with non-containerized low-level radioactive waste must be monitored for potential intakes of airborne radioactivity in accordance with License Condition 119 such that radiation doses are maintained ALARA by implementing proper engineering controls and/or the use of respiratory protection as appropriate.

125. Respirators made available for re-issuance or reuse must show no removable contamination in access of 100 disintegrations per minute (dpm) per 100 square centimeters (cm^2) alpha, or in excess of 1,000 dpm per 100 cm^2 beta-gamma (as determined by standard swipe or smear techniques), and no fixed beta-gamma contamination in access of 0.2 milliRoentgen per hour (mR/hr) above background on contact.

126. Eating, drinking, or smoking shall not be allowed within the restricted area or in any area where radioactive material is handled, transferred, or processed. Radiation Safety Technician supervised water consumption may take place at a location approved by the executive director to prevent heat stress to workers on case-by-case basis.

127. The Licensee shall designate any area as an airborne radioactive area in accordance with 30 TAC §336.2.

128. The Licensee must conduct surveys for fixed and removable alpha, beta, or gamma contamination, by standard swipe or smear technique, in accordance with Table 1 below. Any positive results in swipes taken in these areas must elicit an immediate investigation as to cause. Surfaces which have removable contamination greater than the limits stated in 30 TAC §336.364, Appendix G, must be decontaminated.

Table 1: Contamination Surveys

Radiation Detection Methods	Location	Frequency
A. Gamma Radiation Levels	Laboratory	Monthly or post job upon work completion per the Radiation Work Permit (RWP)
Gamma Radiation Levels	Office Area(s)	Monthly
Gamma Radiation Levels	Lunch/Change Area(s)	Monthly
Gamma Radiation Levels	Transport Vehicles	Upon vehicle arrival at site and before departure
Gamma Radiation Levels	Low-Level Radioactive Waste Holding Area(s)	Monthly or post job upon work completion per the RWP
Gamma Radiation Levels	Decontamination Facilities	Monthly or post job upon work completion per the RWP
B. Contamination Swipes	Laboratory	Monthly or post job upon work completion per the RWP
Contamination Swipes	Office Area(s)	Monthly
Contamination Swipes	Lunch/Change Area(s)	Monthly
Contamination Swipes	Transport Vehicles	Upon vehicle arrival at site and before departure
Contamination Swipes	Outer Surface of each Shipping Container	Upon container arrival at site and before departure
Contamination Swipes	Decontamination Facilities	Monthly or post job upon work completion per the RWP
Contamination Swipes	Low-Level Radioactive Waste Holding Area(s)	Monthly or post job upon work completion per the RWP
C. Employee and Personnel Survey	Skin and Personal Clothing	Prior to exiting restricted area per the RWP
D. Gamma Survey	Administrative Building(s)	Quarterly
Gamma Survey	All work stations and areas that contain or have contained LLRW	Quarterly

129. Step-off pads shall be located outside posted contamination areas and/or high contamination areas and must be surveyed and the results documented in the post job survey as required by the RWP. Step-off pads with surface levels more than twice background beta-gamma or removable contamination greater than the limits stated in 30 TAC §336.364, Appendix G, shall be decontaminated and/or replaced.

130. Reserved.

131. Each employee (including temporary and contract workers) who works in areas where contact with low-level radioactive waste or other radioactive material is possible must be surveyed before leaving the work site. Removable contamination greater than the limits stated in 30 TAC §336.364, Appendix G must be decontaminated.

132. All radiation workers must receive at least 24 hours of radiation worker classroom training following the Technical Topics listed in the land disposal facility application.

133. The outer surfaces of each shipping container must be swipe-tested for removable contamination upon receipt. Each shipping container must also be surveyed individually to assess the external radiation fields present and a record made of the readings.

134. The RSO shall conduct audits of the radiation safety program in accordance with the following:

A. At intervals not to exceed 12 months;
B. Include all of the items listed in the procedures provided in the land disposal facility application as activities conducted to evaluate specific components of an audit; and
C. Include observation of the performance of radiation safety procedures as a part of an audit of the radiation safety program.

135. Any material to be released for unrestricted use from the land disposal facility must be surveyed for contamination. Contamination may not exceed the limits specified by the 30 TAC §336.364 and §336.356.

136. The RSO must review the following areas of the Radiation Safety Program at least quarterly:

A. Health physics authority and responsibility;
B. Operating procedures (involving the receipt, handling, and disposal activities);
C. Audits, inspections, and surveys conducted by the facility RSO (for timeliness and the resolution of any problems);
D. Radiation protection including employee exposure records; bioassay procedures and results; quarterly, semiannual, and annual surveys and inspections; radiological survey, and sampling data; and any changes in operating procedures;
E. Radiation safety training;
F. Respiratory protection program;
G. Facility and equipment design including ventilation rates within various portions of the facility, and fire control;
H. Control of airborne low-level radioactive wastes;
I. Compliance with applicable federal and state regulations and the conditions of this license; and
J. Audit of receipt procedures.

137. The RSO must prepare an annual report summarizing the reviews and audit. The report must be submitted for review by the executive director within 30 working days after the Licensee receives the final audit report from the auditors.

138. Along with complying with all confined space entry requirements and before any work, including maintenance, repair, cleaning, dismantling or other such activities, is performed within closed tanks on the land disposal facilities or the storage and processing facility which may contain or have contained radioactive materials, radiation work permits (or their equivalent) shall be submitted to the RSO. The RSO or his or her designee shall survey all tank interiors using radiological measuring and detection instruments and swipe methods to determine if contamination is present prior to any work being performed. If contamination exceeding 220,000 dpm per 100 cm^2 is found or if the RSO does not perform such a survey, then protective clothing and respiratory protection shall be worn by employees during the performance of operations.

General Packaging for the Land Disposal Facility

139. All waste intended for disposal at the land disposal facility must be packaged and shipped in accordance with waste acceptance criteria authorized by this license. Waste intended for the Compact Waste Disposal Facility must meet requirements found in Attachment C of this license, *Compact Waste Disposal Facility Waste Acceptance Criteria*.

140. All discrete items, as defined by the United States Nuclear Regulatory Commission's (U.S. NRC) current "Concentration Averaging and Encapsulation Branch Technical Position"(BTP), may be disposed of in the Federal Facility Waste Disposal Facility or the Compact Waste Disposal Facility and shall be encapsulated, grouted, and classified by concentration averaging in accordance with the BTP.

Waste Characteristics and Waste Forms for the Land Disposal Facility

141. In accordance with 30 TAC §336.229, no person may reduce the concentration of radioactive constituents by dilution to meet exemption levels established under the Texas Health and Safety Code §401.106, or change the waste's classification or disposal requirements. Low-level radioactive waste that has been diluted as a result of processing, stabilization, mixing, or treatment, including, but not limited to, 40 CFR Part 268, or for any other reason, must be subject to the disposal regulations it would have been subject to prior to dilution.

142. Waste Requirements

A. The Licensee may not dispose unstable waste in the Compact Waste Disposal Facility or the Federal Facility Waste Disposal Facility that does not meet the requirements of 30 TAC §336.362(b)(2).
B. Unstable soil or soil-like Class A low-level radioactive waste, excluding waste containing radionuclides with half-lives greater than 35 years or transuranics in concentrations less than ten (10) nanocuries per gram, may only be disposed within concrete canisters in the Federal Facility Waste Disposal Facility Containerized Disposal Unit or Compact Facility Waste Disposal Unit.
C. For the purpose of the Federal Waste Facility, the Licensee is authorized to accept for disposal waste which is handled, treated, packaged, or characterized in accordance with applicable Department of Energy orders, policies, and procedures. Waste class applies when the waste is manifested for transport, regardless if a waste class has been assigned on the manifest documents. The waste classification requirements found in 30 TAC §336.362 shall apply.

143. Reserved.

Disposal Operations

144. The Licensee must manage all stormwater and wastewaters that come in contact with waste or other radioactive constituents during operations in accordance with TCEQ Wastewater Permit No. WQ00049480000. All stormwater and wastewaters that come in contact with waste or other radioactive constituents during operations shall be managed in accordance with this license Wastewater shall be managed in accordance with the following conditions:

A. The Licensee shall provide details of any agreement for offsite wastewater disposal, such as the location of the offsite facility, maximum quantity of contact water agreed to be sent per shipment, the agreed methods of shipment, and a copy of the contract to TCEQ within 30 days of the contract being finalized.

B. The Licensee shall provide details of the 12,000 gallon contact water holding tank recirculation pump intake filter, including intended filter media.

C. The Licensee shall provide details of the entire process and equipment to be used for long term storage of micro-filters during anticipated waste water treatment plant offline periods.

D. The Licensee shall submit all procedures associated with the waste water treatment plants within 60 days from the date the waste water treatment plants are declared operational. The procedures shall include detailed operating procedures, maintenance procedures, emergency handling and shutdown procedures, monitoring and analysis procedures, and long term storage procedures for micro-filters. The procedures shall have the Licensee numbering and formats and approval signatures.

E. The Licensee shall submit all drawings associated with the waste water treatment plants within 60 days from the date the waste water treatment plants are declared operational. The drawings shall be signed and sealed by a Texas Registered Professional Engineer. Drawings associated with the waste water treatment plants shall include the structure, building, and control schematics. Drawings associated with the waste water treatment plants shall also include the piping and instrumentation (P&ID) drawings that show the interconnection with "untreated contact water tanks" and "treated contact water tanks" and associated piping, controls, instrumentation, pumps, and valves.

F. The Licensee shall submit a copy of the startup, operational and functional verification report generated by the waste water treatment plant design contractor prior to transfer and acceptance by the Licensee.

G. The Licensee shall ensure that the spill containment for the Federal Waste Facility and the Compact Waste Facility waste water treatment plant buildings shall be 110 percent or greater of the largest container in each of these buildings.

145. For the Compact Waste Facility the Executive Director may authorize, through minor amendment to the license, an increase in the total decay corrected radioactivity limit in license condition 7.A within the following specifications:

A. Upon disposal of 2,000,000 decay corrected curies the Licensee may request an increase in the total decay corrected radioactivity not to exceed 6,000,000 curies.

B. Upon disposal of 4,000,000 decay corrected curies the Licensee may request an increase in the total decay corrected radioactivity not to exceed 8,000,000 curies.

146. The Licensee may not exhume previously buried waste unless specifically authorized by the executive director.

147. The top of the all disposed Containerized Class A, Class B, and Class C low-level radioactive waste must be a minimum of five (5) meters below the top surface of the cover or must be disposed of with intruder barriers that are designed to protect against an inadvertent intrusion for at least 500 years in accordance with 30 TAC §336.730(b)(3).

148. The Licensee may accept Class A, Class B, and Class C low-level radioactive compact waste for disposal in reinforced modular concrete canisters and inside an additional reinforced concrete barrier in the Compact Waste Disposal Facility. The Licensee may accept compact Class A bulk waste for disposal in the In-Cell Non-Containerized Disposal Unit as prescribed in this License. Large components (e.g., steam generators, reactor vessels, reactor primary system components) that will not fit into the reinforced modular concrete canisters as provided in the land disposal facility application must be evaluated by the executive director on a case-by-case basis prior to

disposal. Large components must be backfilled with sand, or grout, if necessary, to ensure the voids are filled. The Licensee may not accept low-level radioactive waste that contains hazardous listed chemicals or exhibits hazardous characteristics as defined by 40 CFR Part 261 (Identification and Listing of Hazardous Waste) for disposal at the Compact Waste Disposal Facility.

149. The Licensee may dispose of Class A, Class B, and Class C low-level radioactive federal facility waste in the Federal Facility Waste Disposal Facility Containerized Disposal Unit by placement in reinforced modular concrete canisters and inside an additional reinforced concrete barrier. The Licensee may accept federal facility Class A bulk waste for disposal in the In-Cell Non-Containerized Disposal Unit as prescribed in this License. Large components that will not fit into the reinforced modular concrete canisters as provided in the land disposal facility application must be evaluated by the executive director on a case-by-case basis prior to disposal. Large components must be backfilled with sand, or grout, if necessary, to ensure the voids are filled.

150. The Licensee must implement measures to reduce the potential for desiccation and cracking of the performance cover during operation and closure, with special emphasis on areas not overlain by a geomembrane. The Licensee must conduct periodic surveillance to verify that the measures are effective.

151. During construction of the cover system, the Licensee shall measure the geotechnical properties of the cover system materials to verify the initial design values indicated in the updated Decommissioning and Site Closure Plan. The Licensee shall report any deviations and propose any necessary design modifications that may affect cover system performance to the executive director. The Licensee will demonstrate that the possibility for water to flow from the Ogallala-Antlers-Gatuña formation to the lateral drainage layer of the final constructed cover will not affect the performance of the Compact Waste Disposal Facility and Federal Facility Waste Disposal Facility.

152. The Licensee shall minimize the introduction of water into the disposal units. The Licensee must manage all stormwater on the land disposal facility. This management of stormwater must include, but is not limited to, the collection and conveyance of all stormwater and wastewater, and be subjected to the radionuclide effluent concentration limits, as specified in 30 TAC §336.359, Appendix B, Table II.

153. The Licensee must sample and perform radionuclide analyses on all precipitation and stormwater planned for re-use. Possible re-use of on-site water can be considered only as authorized by this license and TCEQ Permit No. WQ00049480000. Precipitation and stormwater with radionuclide concentrations greater than those listed in 30 TAC §336.359, Appendix B, Table II must be treated and disposed as low-level radioactive waste and may not be used for dust suppression or any other activity that increases the risk to human health or the environment.

154. The Licensee must initiate an investigation as to the nature, extent, and cause of any leachate collected from the leachate collection system, in which the radionuclide concentrations are greater than 50% of the 25 mrem/year dose to the public limit and take appropriate corrective action. The Licensee will notify the executive director within ten (10) days of any such occurrence.

155. With the exception of transporting waste across the buffer zone, environmental/radiation monitoring and routine maintenance, the Licensee shall not handle, store, or dispose of waste, or engage in any waste-related activities in any buffer zone. Any other activity in any buffer zone shall require written approval of the executive director.

156. For the Compact Waste Disposal Facility and the Federal Facility Waste Disposal Facility the Licensee shall:

A. Pre-position concrete canisters in the disposal unit or in areas authorized by procedures for emplacement of waste packages. Temporary covers may be placed on empty canisters. Packages shall be emplaced to permit voids between packages to be filled with grout. After waste packages have been placed in the concrete canister, grout shall be placed around the packages to reduce voids. Permanent lids shall be placed on pre-position concrete canisters between grout pours. Once canisters are filled, grouted and in position with a permanent lid, native backfill consisting of dry, free-flowing, cohesionless natural material shall be placed around the canisters.

B. Manage IC NCDU operations and placement of canisters containing higher hazard waste to ensure that IC NCDU workers are adequately protected from exposure to radiation emanating from the canister disposal areas. Such management techniques shall include maintaining adequate separation between IC NCDU operations and previously placed canisters; and shall include placing canisters containing high-gamma waste such that other canisters with lower gamma radiation levels stand between them and IC NCDU operations.

C. Place loaded canisters adjacent to an IC NCDU only after construction of an IC NCDU; and only after operational steps are taken to ensure that occupational radiation exposures will remain within acceptable limits and as low as reasonably achievable (ALARA).

D. Provide drainage from the IC NCDU to the leachate collection sump.

E. Place canisters on top of an IC NCDU only if supported by a slab consisting of concrete. The concrete mix shall be designed to have a minimum compressive strength of 2,000 pounds per square inch (psi) per ASTM methods C31 and C39 for field quality control. The minimum thickness of the concrete canister support slab shall be six (6) inches. The Licensee shall provide drainage from the support slab to the leachate collection sump.

F. Place IC NCDU waste in horizontal lifts such that the maximum operating surface slope is two and one half horizontal to one vertical (2.5H:1V).

G. Remove wood or other temporary IC NCDU waste support forms constructed from organic material.

H. Remove wood or other incidental organic pieces from IC NCDU waste encountered during placement operations which are larger than approximately twenty seven (27) square inches in cross-sectional area for disposal in a concrete canister.

I. Remove incidental pipes from IC NCDU waste encountered during placement operations which are larger than nine (9) inches in diameter, fill with concrete and dispose of as a monolith, or crush.

J. Remove incidental large non-organic pieces contained in IC NCDU waste and dispose of by concrete backfilling in place.

157. The Licensee shall handle and emplace waste in the disposal units in a manner that maintains disposal package integrity. Waste packages and concrete canisters shall be protected from any land disposal facility operations which may cause damage or otherwise impact the integrity of packages and canisters.

Environmental Surveillance

158. The Licensee must conduct environmental surveillance of the land disposal facilities as follows:

A. General Provisions. The Licensee must conduct the radiological and non-radiological environmental monitoring specified in this license and the consolidated Radiological Environmental Monitoring Program (REMP); and changes to the REMP must be approved by the executive director. The Data Quality Objective (DQO) Process, established by the United States Environmental Protection Agency (US EPA), must be used to establish performance or acceptance criteria, which serve as the basis for designing any of the monitoring plans for the facility for collecting data of sufficient quality and quantity to

support the goals of each plan (pre-operational, operational, and post-operational). The Licensee must use the DQO Process, which consists of seven (7) iterative steps in development of a data collection design that specifies the type, number, location, and physical quantity of samples and data, as well as the quality assurance and quality control activities that will ensure that sampling design and measurement errors are managed sufficiently to meet the performance or acceptance criteria specified in the DQOs. The Licensee must submit a Quality Assurance Project Plan (QAPP) that follows the Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) process, and which will include details of the DQO, the method quality objective, and the method of uncertainty analysis for each radio-analyte per media and for each method. The QAPP must be submitted to the executive director for review prior to any sampling performed for the Modified Natural Radiation Monitoring Program and the Pre-Operation, Construction, and Operational Environmental Monitoring Program for this license.

1) The Licensee must establish the Method Quality Objectives (MQOs), as specified in MARLAP, for the following method performance characteristics: Method Uncertainty (expressed as an estimated standard deviation), Detection Capability (expressed as the minimum detectable concentration, or MDC); and Quantification Capability (expressed as the minimum quantifiable concentration, or MQC). The Licensee must establish an Action Level (AL) and Gray Region for each analyte (radionuclide), in each of the matrices during the MQO directed planning process. The Licensee must obtain an approval of the established MQOs from the TCEQ and must provide the established MQOs to their contract analytical laboratory.

2) In determining the method uncertainties, the null hypothesis must be that the sample measurement for each radionuclide / medium pair is greater than the stated AL, which shall equal a fraction of the Regulatory Limit for each radionuclide/medium pair. Thus, the Upper Bound of the Gray Region (UBGR) shall be the AL stated above and the Lower Bound of the Gray Region (LBGR) shall be zero for the anthropogenic radionuclides and the minimum value from the set of calculated Investigation Levels (ILs) for each radionuclide/medium pair of naturally-occurring radionuclides. The decision rule shall be if the sample measurement is less than the Analytical Decision Level (ADL), then reject the null hypothesis. The ADL equals the AL minus the required method uncertainty multiplied by the z-score with confidence of 1-alpha. The required method uncertainty equals the difference between the UBGR and LBGR divided by the sum of the z-scores with confidence of 1-alpha and 1-beta. The values of alpha, beta, and the AL shall be determined by May 15, 2012.

3) In the event that an ADL is exceeded, the Licensee shall perform the following:

   a. Notify the agency within 24 hours of verification of the analytical results;
   b. Investigate the cause and, if necessary, take corrective action, including but not limited to, re-sampling and re-analysis;
   c. Perform a trend analysis;
   d. Monitor the sample location, and
   e. Document the incident and maintain the record.

4) In the event that an AL is exceeded, the Licensee shall perform the following:

   a. Notify the agency within 24 hours of verification of the analytical results,
   b. Investigate the cause and, if necessary, take corrective action including, but not limited to, re-sampling and re-analysis;

c. Perform a trend analysis;
d. Modify procedures or work practices that contributed to the circumstances resulting in the release, if necessary;
e. Monitor the sample location; and
f. Document the findings and produce a report which contains an analysis on whether remediation is necessary within 14 days of verification of the analytical results.

B. Standard Operating Procedures (SOPs) for environmental monitoring must ensure consistency and must accomplish the following goals:

a. SOPs must be specific, include the details of referenced guidance and standards and reference associated procedures;

b. SOPs must include records management details;

c. SOPs must provide details of corrective actions and a full listing of staff responsibilities; and

d. Based on these goals and ongoing improvements made in coordination with TCEQ, the Licensee shall submit to TCEQ revised SOPs for environmental monitoring by June 30, 2012.

C. Environmental samples shall be analyzed by a National Environmental Laboratory Accreditation Conference (NELAC) certified laboratory. Prior to analysis, Licensee must provide a list of methods that are not NELAC certified that they plan to use and a list of methods that were NELAC certified but have been modified. This information must be included in the QAPP. As part of radiological sample analysis, all analytical batches must include laboratory control blanks, method blanks, matrix spikes, and laboratory duplicates and only include WCS samples. An analytical batch must be defined in the QAPP. In addition, the laboratory must provide the method of uncertainty calculation.
D. Duplicate samples. The Licensee must provide the executive director an opportunity to obtain duplicate split samples concurrently with the Licensee's data collection schedule.
E. Monitoring Records. The Licensee must maintain records of all monitoring activities.
F. Monitoring Well Installation. All monitoring wells must be constructed and maintained in accordance with the requirements of the Texas Occupations Code, Chapter 1901 and in accordance with American Society for Testing and Materials (ASTM) D5092-04e1 (2004) "Standard Practice for Design and Installation of Ground Water Monitoring Wells." Monitor well clusters will consist of one (1) well screened in the Ogallala-Antlers-Gatuña formation, one (1) well screened at the top of the 225-foot layer, one (1) well screened at the bottom of the 225-foot layer, and one (1) well screened at the bottom in the 125-foot layer. Any well alterations must be authorized by TCEQ. The Licensee shall notify executive director when it performs an inspection of any altered wells, and shall report the results of the inspection within 30 days of completion.
G. Evaluation of Data. The Licensee must evaluate monitoring data using a two (2)-tiered environmental monitoring response system. Investigation levels and action levels will be specified as described in the land disposal facility license application. The results of the evaluations must be included in the annual environmental monitoring report to the executive director conducted during each calendar year.
H. The following procedures must be used when monitoring all groundwater zones and be described in the Site-specific Data Assessment and Management Plan (S-DAMP) and the Quality Assurance Project Plan (QAPP):

1) For the collection of representative groundwater samples, the Licensee shall allow for parameter stabilization during the purging process prior to sample collection. The Licensee shall monitor water quality parameters (conductivity, pH, and temperature) according to ASTM D 4448-01 Standard Guide for Sampling Ground-Water Monitoring Wells (2007). Prior to sampling, wells must be pumped down to the point at which the conductivity equilibrates. Samples must then be acquired from the well by a pump or lowering and filling a sample bailer with well water and then transferring the water to a sample container. All parameter readings must be recorded during purging and collected at regular intervals. Stabilization is achieved when at least three consecutive readings are taken at three-(3) to five-(5) minute intervals and are within tolerances stated in ASTM D 4448-01. When sufficient recharge of water exists, wells will be purged before a sample is collected. If documented insufficient recharge of water exists or other factors make purging and/or sampling impractical, the conditions and reasons must be documented and available for review by the executive director.
2) For well-specific conditions (i.e., rate of recharge, water quantity, etc.) where low-flow sampling techniques are appropriate, sampling method ASTM D 6771-02 Standard Practice for Low-Flow Purging and Sampling for Wells and Devices Used for Ground-Water Quality Investigations must be used for sampling methodologies for any wells listed in the REMP. Parameter readings will be recorded as specified in ASTM 06771-02 for determining stabilization.
3) In addition, water levels must also be measured prior to sample collection.
4) The S-DAMP must include a method or methods for well purging and well sampling, including wells in low flow conditions, to assure that well samples are representative of the groundwater in the zone that is sampled.
5) For the purpose of observing variations in water levels, water tables and potentiometric surfaces, the Licensee must establish a network of wells that is representative of water-bearing zones and monitor using continuous transducers when necessary.
6) Well sampling must be conducted whenever it is determined that: (1) water is groundwater and (2) a saturated condition exists. The method for water sampling is intended to assure that well samples are taken from groundwater in the formation and not from condensation in the well.
7) For all radiochemical analyses, water samples will not be filtered in the field and will not be acidified in the field prior to shipping to the laboratory, unless filtering and acidification is required by a specified analytical method. Filtering will be performed by the laboratory when the sample contains sediment. Certain radionuclides of interest can partition to the sediment; in which case, when there is sufficient sediment, both the water and the sediment will be analyzed. Container type and size will also be determined by the analytical method.
8) For all chemical analyses, water samples will not be filtered in the field and will be preserved according to the analytical method requirements. Filtering will be performed, by the laboratory, when the sample contains sediment. Certain chemical analytes of interest can partition to the sediment; in which case, when there is sufficient sediment, both the water and the sediment will be analyzed. Container type and size will be determined by the analytical method.
9) The Licensee shall provide an annual environmental monitoring report to the executive

director to be submitted before April 30.The annual report shall include the results of all environmental media samples for all facilities at the Waste Control Specialists LLC, Andrews County site. The Annual Meteorological Report should be submitted prior to or included in the April 30 annual environmental monitoring report. The Licensee shall follow the requirements of 30 TAC Chapter 25 (Environmental Testing Laboratory Accreditation and Certification,) and provide the executive director with acceptable analytical data provided by an accredited environmental testing laboratory unless extenuating conditions exist as specified under 30 TAC §25.6 (Conditions Under Which the Commission May Accept Analytical Data).

10) All of the above information must be reported in the semi-annual environmental monitoring report.

I. In the event the 125-foot zone becomes saturated, the Licensee shall notify the executive director within ten (10) days. Within 60 days of the event, the Licensee shall submit an updated REMP which provides for the installation of monitoring wells in the 180-foot zone and monitoring of the 180-foot zone.

159. The Licensee must provide a report on site topography for the land disposal facility including maps and all supporting data to the executive director every five (5) years.

160. The Licensee must provide to the executive director every five (5) years written documentation from the Texas Parks and Wildlife Department and the United States Fish and Wildlife Service regarding the presence of threatened or endangered species occurring near the site of the land disposal facility.

161. Reserved.

162. Before the Licensee takes any action regarding site playas, the Licensee shall obtain and provide to the executive director a site-specific “no jurisdiction” determination from the United States Army Corps of Engineers.

163. Reserved.

164. Reserved.

165. Reserved.

166. Reserved.

167. The Licensee must conduct an Operational Environmental Monitoring Program as described in the Licensee’s Consolidated Radiological Environmental Monitoring Program.

168. The Licensee must ensure that State of Texas Well Reports are provided to the Texas Department of Licensing and Regulation for all new piezometers, monitoring wells, and other water wells installed at the site pursuant to this License. Copies will also be provided to the executive director within 60 days of well completion.

169. The Licensee must continue erosion monitoring and report annually to the executive director after the commencement of major construction. The Licensee must also maintain a weather/climate station in the immediate proximity of erosion monitoring in Ranch House Draw and the location of additional erosion pin arrays. If this data indicates erosion is greater than the expected erosion as provided in the land disposal facility application over the operational life of the facility, the Licensee must submit a license amendment to establish the final cover design and closure plans to

address the observed erosion rate.

170. The Licensee must include the use of high-volume air samplers in air monitoring.

171. The Licensee must provide for a transitional environmental monitoring period whenever program components, including sampling locations, equipment, techniques, or laboratories, are changed. This transitional period must include parallel monitoring with both the old and new conditions for at least one (1) sampling period or as directed by the executive director.

172. Using the data quality objective (DQO) process, the Licensee must develop prediction limits which will be used to determine investigation levels (ILs) and action levels (ALs) for each environmental medium. The statistical methodology will require one (1) year of data for each parameter under review as approved by the executive director. The specific methods and sample analyses for each baseline measurement must be incorporated into the data used for the prediction limit calculations. The final prediction limits and calculation methodology must be submitted to the executive director by June 14, 2012.

A. Evaluation of Data. The Licensee shall evaluate monitoring data using a two-tiered environmental monitoring response system (specifically, investigation and action levels). Investigation Levels (ILs) and Action Levels (ALs) shall be determined for all media, analytes, and sampling locations. The results of the evaluation must be included in the annual environmental monitoring report to the executive director. As part of the initial annual environmental monitoring report to the executive director, the Licensee shall revise the REMP to include a new section on reporting exceedances of ILs and ALs.

B. All ILs and ALs shall be based on appropriate prediction intervals for individual, grouped, or site-wide comparisons, as appropriate, based on evaluation of the baseline and pre-operational data. Independence of intra-location samples should be verified, and, if this statistical independence is not confirmed, then the intra-location prediction intervals should be adjusted in accordance with statistical theory. The expression used to compute the prediction intervals shall be based on sample size and number of future comparisons. The ILs and ALs shall provide sufficient warning of a release and consider health effects as a secondary factor in the detection of the limits. Documentation on the computations, bases, and assumptions should be provided for review by the executive director.

C. The Licensee shall provide details, algorithms, and assumptions used by the statistical software in estimating the Type I and Type II error rates claimed for the stated decision rules. The Licensee should specify the scenarios and conditions under how the Type II error rates were obtained. Assumptions on whether the normality of the data is applied throughout the range of contaminant levels of interest shall be validated in the software along with whether the standard deviation can be modeled as a function of the mean contaminant level.

D. The Licensee shall state whether the Method Detection Limit (MDL) used in analytic measurements is understood as a critical limit or a detection limit. Quantification limits of analytic results should inform whether the AL and IL are achieved in order for the analytic measurements to be used as proxies for the true constituent concentration levels.

E. ILs and ALs will be incorporated into RML R04100 by reference. Procedures documented in the QAPP will be incorporated into RML R04100 by reference after approval from the executive director.

173. The Licensee shall operate an on-site monitoring station to collect the following meteorological data on a 10-minute averaging period with 90 percent (%) minimum data retrieval: two (2)-meter data collection of precipitation, barometric pressure, solar radiation, scalar wind speed, vector wind direction, temperature, and relative humidity; and ten (10) meter data collection of scalar wind speed, vector wind direction, and relative humidity. The Licensee must submit to the executive

director annual meteorological reports updated to include data from the previous year. The report must be submitted no later than March 31 of the following year.

Closure Requirements for the Land Disposal Facility

174. Prior to closure and license termination, the Licensee shall:

A. Re-evaluate the impacts or activities of nearby facilities in order to ensure that the performance objectives of 30 TAC §336.723 will continue to be met after closure;
B. Evaluate the impacts to workers in the disposal unit area during the closure of a facility. An analysis of worker doses shall be submitted to the executive director prior to initiating closure;
C. Provide a list of all wells that will not be used after closure and provide details and schedule for properly removing and plugging those wells;
D. Assess the performance of those wells that are to remain in use; and
E. Provide the details of the performance with the list of wells to be properly removed and plugged.

175. General requirements for closure of the facilities are listed as follows:

A. During closure of the Federal Facility Waste Disposal Facility, the Licensee may not store, process, or dispose of mixed wastes defined in 30 TAC §336.2 unless authorized by a TCEQ hazardous waste permit in accordance with 30 TAC Chapter 335.
B. During closure of the Federal Facility Waste Disposal Facility, in addition to the compliance with the decommissioning standards in 30 TAC Chapter 336, Subchapter G, the Licensee must comply with the closure requirements of a TCEQ hazardous waste permit in accordance with 30 TAC Chapter 335.
C. All wells that will not be used after closure must be properly removed and plugged. Documentation of proper removal and plugging must be submitted to the executive director before closure can be authorized.
D. Changes made to the Decommissioning and Site Closure Plan included in the land disposal facility license application may only be made through a license amendment authorized by the commission.
E. After completion of the final cover for each disposal unit(s), the Licensee must submit certification of proper construction of the final cover, signed, sealed, and dated by a Texas licensed professional engineer. Each final cover certification must be accompanied by a certification report which contains the results of all tests performed to verify proper construction. The Licensee must conduct whatever tests, inspections, or measurements are necessary in the judgment of the professional engineer to certify that the final cover has been constructed in conformance with the design and construction specifications of this license and associated land disposal facility license application. The certification report must, at a minimum, contain the following engineering plans and test results:

1) Scaled plan-view and east-west and north-south cross-sections which accurately depict the area boundaries and dimensions of the cover; surrounding natural ground surface elevations; minimum, maximum, and representative elevations of the base on which the interim cover was placed; minimum, maximum, and representative elevations of the upper surface of the interim and final covers; thickness, extent, and materials of component parts of the cover system; and

2) All observations, tests, and analyses required to ensure that the installation has been completed with the terms of this license and the incorporated design plans waste

migration and interaction with emplacement media, or any other tests, experiments, or analyses pertinent to the long-term containment of emplaced waste within the land disposal facility;

F. One (1) year before final closure of the disposal site, or as otherwise directed by the executive director, the Licensee must submit an application to amend the license for closure. The amended closure application must include a final revision and specific details of the disposal site closure plan and decommissioning plan included as part of the license application submitted under 30 TAC §336.708(a) that includes each of the following in accordance with 30 TAC §336.719(a):

1) Any additional geological, geochemical, hydrological, or other site data obtained during the operational period pertinent to the long-term containment of emplaced wastes;
2) The results of tests, experiments, or any other analyses relating to backfill of excavated areas, closure and sealing;
3) Any proposed revision of plans for decontamination or dismantlement;
4) Decontamination and dismantlement of surface facilities;
5) Backfilling of excavated areas;
6) Stabilization of the land disposal facility for post-closure care; and
7) Any significant new information regarding the environmental impact of closure activities and long-term performance of the land disposal facility.

G. Upon review and consideration of an application to amend the license for closure submitted in accordance with subsection 30 TAC §336.719(a), the commission may issue an amendment authorizing closure if there is reasonable assurance that the long-term performance objectives of 30 TAC §336.723 will be met.

H. The Licensee shall address the impact of ongoing disposal activities on closed disposal unit stability. An analysis of the stability of the disposal unit on disposal activities shall be submitted to the executive director for review.

176. Temporary disposal unit boundary markers and disposal unit identification markers shall be erected upon completion of backfill operations until permanent markers are installed.

177. Permanent monuments shall be installed within 120 days of the disposal unit closure and completion of the disposal unit cover. The information below shall be inscribed on each monument:

A. Total radioactivity in curies, excluding source material;
B. Total amount of source material in pounds;
C. Total amount of special nuclear material in grams;
D. Disposal unit number or other means of identification;
E. Date of opening and closing the disposal unit;
F. Volume and class of waste in the disposal unit; and
G. Dimensions of the disposal unit.

178. General requirements for post-closure are as follows:

A. The Licensee must perform post-closure care for the Compact Waste Disposal Facility in accordance with the land disposal facility license application and 30 TAC §336.720(a).
B. The Licensee must perform post-closure care for the Federal Facility Waste Disposal Facility in accordance with the land disposal facility license application and 30 TAC §336.720(a) and §335.174.
C. In addition to compliance with license conditions for environmental surveillance specified in the REMP, the Licensee must comply with the following conditions:

1) Maintain all storm water conveyance structures in good functional condition.

2) Maintain the cover on the Compact Waste Disposal Facility and Federal Facility Waste Disposal Facility such that the cover promotes drainage, prevents ponding, minimizes surface water infiltration, and minimizes erosion of the cover. Any desiccation cracks, settlement, erosion, gullying, or other damage must be repaired upon observance.

3) Maintain the cover to promote natural growth of native vegetation.

4) Maintain all benchmarks at the land disposal facility.

5) Maintain the land disposal facility perimeter fence, manned or locked gates, and warning signs in good functional condition.

6) Ensure that all entrances to the land disposal facility have manned or locked gates.

7) Ensure that the executive director has access to the land disposal facility.

8) Perform all post-operational radiological and non-radiological monitoring in accordance with the land disposal facility license application's Radiological Environmental Monitoring Plan and Non-Radiological Environmental Monitoring Plan, respectively, with the following exceptions:

    a. In addition to monitoring wells shown in the land disposal facility license application, the Licensee must install additional wells as provided in the updated REMP.
    b. Annual fauna samples must be collected when available.

9) Collect and remove pumpable liquids in the leak detection and leachate collection system sumps to minimize the head on the bottom of the liner.

10) Manage all liquids removed from the leachate collection and leak detection systems in accordance with this license and 30 TAC Chapters 335 and 336.

11) Maintain a record of the amount of liquids removed from each leak detection system sump at least monthly during the post-closure period, except that the Licensee may record the amount of liquids removed from the each leak detection system sump quarterly during the post-closure period, after the final cover is installed, provided that the liquid level in the sump stays below the pump operating level for two (2) consecutive months.

12) If at any time during the post-closure period the pump operating level is exceeded at units on quarterly recording schedules, the Licensee must return to monthly recording of amounts of liquids removed from each leak detection system sump until the liquid level again stays below the pump operating level for two (2) consecutive months.

13) Reserved.

14) The Licensee shall conduct walkover surveys during the institutional control period on a

semiannual basis.

15) Visual inspections must be performed quarterly during operations and closure, and annually thereafter.

D. The following requirements apply to disposal units receiving mixed waste as defined 30 TAC §336.2:

1) The Licensee must establish an Action Leakage Rate (ALR) pursuant to 40 CFR §264.302. The Licensee must determine if the ALR, given in gallons per acre per day, for each sump has been exceeded by converting the weekly or monthly flow rate from the monitoring data obtained to an average daily flow rate in gallons per acre per day for each sump. The Licensee must calculate the average daily flow rate for each landfill sump on a weekly basis during the active life and closure period.

2) Prior to receipt of waste, the Licensee must have in place an approved Response Action Plan (RAP) which meets the requirements of 40 CFR §264.304. The RAP must set forth the actions to be taken if the ALR is exceeded.

3) The Licensee must determine if the ALR, established in accordance with license, has been exceeded by converting the monthly flow rate from the monitoring data obtained under the license, to an average daily flow rate in gallons per acre per day for each sump. The Licensee must calculate the average daily flow rate for each sump on a monthly basis during the post-closure care period.

4) If the ALR is exceeded at any time during the post-closure period, the Licensee must perform the following activities.

   a. Notify the executive director in writing of the exceedance within seven (7) days of the determination;
   b. Submit a preliminary written assessment to the executive director within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;
   c. Determine to the extent practicable the location, size, and cause of any leak;
   d. Determine whether any waste should be removed from the unit for inspection, repairs, or controls;
   e. Determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and
   f. Within 30 days after the notification that the ALR has been exceeded, submit to the executive director the results of the evaluations specified in the license, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the Licensee must submit to the executive director a report summarizing the results of any remedial actions taken and actions planned.

5) To make the leak or remediation determinations in the license, the Licensee must:

   a. Assess the source of liquids and amounts of liquids by source;
   b. Conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and
   c. Assess the seriousness of any leaks in terms of potential for escaping into the environment; or

d. Document why such assessments are not needed.

179. Prior to closure and license transfer, the Licensee, as part of decommissioning, must decontaminate all ancillary facilities, surfaces, and equipment in accordance with 30 TAC §336.364 (Acceptable Surface Contamination Limits). The results of all surveys and decontamination activities must be included in the decommissioning plan.

A. Prior to license transfer, the licensee must dispose of any facilities, surfaces, or equipment that has not been decontaminated, at a licensed low-level radioactive waste disposal facility.
B. The decommissioning plan must include the revised source term in the dose modeling reflecting any onsite disposal of facilities, surfaces, or equipment.

180. The Licensee shall complete and submit the following:

A. A Decommissioning and Site Closure Plan prior to construction that includes updated cost estimates;
B. An updated Decommissioning and Site Closure Plan prior to commencement of closure of each disposal unit. The Licensee shall conduct a review and revise, if necessary, the decommissioning and site closure plan following closure of each disposal unit and submit any revisions to the executive director at that time, or annually, whichever occurs first; and
C. A license amendment for any periodic or final revisions made to the decommissioning and site closure plan.

181. The Licensee must apply for an amendment to transfer the license to the commission upon fulfillment of all applicable requirements under laws for closure and for post-closure observation and maintenance.

182. The Licensee is exempted from the requirements of 30 TAC §336.734(a) for disposal of federal facility waste at the Federal Facility Waste Disposal Facility as authorized by this license. Except for mineral interests transferred to the State of Texas by condemnation prior to issuance of this license, the Licensee must own the land and minerals in fee for the Federal Facility Waste Disposal Facility until transferred to the federal government. Upon completion of all decommissioning requirements and before the transfer of the license can occur, the Licensee shall convey to the federal government all of Licensee's right, title and interest in land and buildings of the Federal Facility Waste Disposal Facility and convey all right, title and interest in federal facility waste to the federal government.

183. Upon application to transfer the license, the Licensee shall acknowledge the conveyance to the State of Texas of all right, title and interest in compact waste located in the Compact Waste Disposal Facility.

Financial Assurance and Qualifications

184. The Licensee must provide all cost estimates and supporting analysis when requesting any changes to financial assurance.

185. Financial assurance acceptable to the executive director in amount and form shall be maintained until license termination has been approved by the commission and the United States Nuclear Regulatory Commission, except for the financial assurance for corrective action and for institutional control.

A. Financial assurance in the amount of $33,300,000 in 2012 dollars for decommissioning and closure, $9,220,000 in 2012 dollars for post-operational surveillance, and $22,790,000 in

2012 dollars for institutional control must be provided by the Licensee to the executive director. These amounts must be converted to current dollars, by use of the methodology cross-referenced in 30 TAC Chapter 37, Subchapter T (Financial Assurance for Near-Surface Land Disposal of Radioactive Waste) prior to posting of financial assurance with the executive director. The amount of financial assurance for decommissioning and closure, post-operational surveillance, and institutional control should be updated annually.

B. The financial assurance amount of $20,000,000 in 2012 dollars for corrective action must be provided by the Licensee to the executive director as an amount sufficient to address unplanned events that pose a risk to public health, safety and the environment that may occur after the decommissioning and closure of the land disposal facility.

C. The Licensee shall annually increase the cost estimates for inflation as described in 30 TAC Chapter 37, Subchapter B (Financial Assurance Requirements for Closure, Post Closure, and Corrective Action). In addition, the Licensee shall submit a revision to the cost estimates along with supporting documentation for the land disposal facility to the commission for approval on the anniversary date of the financial assurance mechanism each year, and as needed upon amendment to the license as determined by the executive director. Commission approval may be demonstrated by either amendment of this license or by order of the commission to specify the current dollar amount. Within 60 days of the commission's approval of the amount for license condition 185. A. and B., the Licensee shall change the level of funding of the financial assurance and submit the revised financial assurance mechanism for approval.

D. The Licensee shall provide financial assurance for bodily injury and property damage to third parties caused by sudden and non-sudden accidental occurrences arising from operations of the Compact Waste Disposal Facility and the Federal Facility Waste Disposal Facility in a manner that meets the requirements of 30 TAC Chapter 37, Subchapter T. If the Licensee utilizes an insurance mechanism for such third party liability coverage as set out in this provision, the Licensee shall forward an acceptable and updated replacement insurance instrument to the executive director at least annually. The insurance mechanism submitted must include an original signature of the insurer.

186. Copies of authorized federal agency agreements specified in License Conditions11.B, 187, and 206.C, shall be mailed within 7 days of execution and prior written approval of the agreement must be granted by the executive director prior to receipt of the waste at the storage and processing facility. The written agreement shall be mailed to

ATTN:
Division Director
Radioactive Materials Division
Texas Commission on Environmental Quality
P.O. Box 13087, Mail Code-233

Austin TX 78711

187. The volume authorized in License Condition No. 195.A for the storage and processing facility shall be further limited in accordance with the amount of Financial Assurance in place for the storage and processing facility with the Commission:

A. Financial Assurance Tiers: WCS shall provide financial assurance coverage at one of the following tier levels:
   1) TIER 1: $18,467,478
   2) TIER 2: $32,881,617

B. Waste stored or processed under the storage and processing facility must fit one of the

following categories. Each waste category is assigned a financial assurance cost per cubic foot to cover the cost of necessary packaging, loading, transportation, and disposal.

1) Commercial Class A waste (C_A): $44.33 per cubic foot
2) Commercial Class High A waste (C_{HA}): $397.66 per cubic foot
3) Commercial Class B and C waste (C_{BC}): $632.04 per cubic foot
4) Commercial Class A mixed waste (C_{MA}): $561.66 per cubic foot
5) Commercial Class B and C mixed waste (C_{MBC}): $796.04 per cubic foot
6) Commercial debris mixed waste (C_{DMW}): $157.81 per cubic foot
7) Federal Class A waste (F_A): $23.08 per cubic foot
8) Federal Class High A waste (F_{HA}): $344.54 per cubic foot
9) Federal Class B and C waste (F_{BC}): $419.54 per cubic foot
10) Federal Class A mixed waste (F_{MA}): $508.54 per cubic foot
11) Federal Class B and C mixed waste (F_{MBC}): $583.54 per cubic foot
12) Federal debris mixed waste (F_{DMW}): $136.56 per cubic foot
13) Cesium-137 contaminated electric arc furnace dust (U. S. Environmental Protection Agency designation K061) waste (C_{K061}): $22.87 per cubic foot
14) Authorized Federal Agency waste requiring a shipping cask (C_{AFASC}): $347.25 per cubic foot
15) Authorized Federal Agency waste not requiring a shipping cask (C_{AFA}): $15.47 per cubic foot

C. The final decommissioning of the storage and processing facility is $4,646,050.

D. The combined costs of final site decommissioning and the summation of the product of the waste category volume currently stored at the storage and processing facility and the financial assurance cost must be less than or equal to the tier amount to satisfy financial assurance requirements for that tier. The financial assurance requirement for the storage and processing facility is described in the following equation:

$$Financial\ Assurance\ Tier\ Amount \geq \$4{,}646{,}050 + \$44.33 * C_A(ft^3) + \$397.66 * C_{HA}(ft^3) + \$632.04 * C_{BC}(ft^3) + \$561.66 * C_{MA}(ft^3) + \$796.04 * C_{MBC}(ft^3) + \$157.81 * C_{DMW}(ft^3) + \$23.08 * F_A(ft^3) + \$344.54 * F_{HA}(ft^3) + \$419.54 * F_{BC}(ft^3) + \$508.54 * F_{MA}(ft^3) + \$583.54 * F_{MBC}(ft^3) + \$136.56 * F_{DMW}(ft^3) + \$22.87 * C_{K061}(ft^3) + \$347.25 * C_{AFASC}(ft^3) + \$15.47 * C_{AFA}(ft^3)$$

E. Subsequent to August 1, 2013, all mixed waste received under this license, except for Authorized Federal Agency waste and waste to be disposed in the federal waste facility, must be in a condition that it can be treated so that the final waste would no longer be regulated as a hazardous waste in accordance with 30 TAC Chapter 335 and may be disposed in the Compact Waste Facility.

F. The licensee shall verify that the tier limit has not been exceeded for each waste shipment that has been accepted and submit a report to the Executive Director on an annual basis.

Storage and Processing Facility

188. The Licensee is authorized to process waste at the storage and processing facility. Such processing shall be performed in accordance with the procedures and representations submitted in the storage and processing facility application dated January 24, 1997, or new or modified procedures specified in License Condition 192 of this license, and are limited to the following:

A. Receipt and survey;
B. Repackaging;

C. Compaction and consolidation utilizing a Container Products Corporation Model B-1000 Box Compactor (CPC compactor). This use is restricted to the Mixed Waste Treatment Facility. Where applicable for waste with hazardous constituents, the Licensee shall also comply with the applicable requirements specified in the hazardous waste permit number 50358 for construction, installation, and operations of the CPC compactor as well as this license. The Licensee shall not place wastes containing free or absorbed liquids, compressed gases, or other media that may cause an unsafe or abnormal condition into any compactor.

1) The licensee shall ensure that the EF-1 exhaust blower is interlocked with the exhaust blower from the CPC compactor, in a fail-safe mode, such that the CPC compactor exhaust blower automatically shuts-off when the EF-1 blower is not operating.

2) Operations and procedures of the CPC compactor require:

a. Contamination surveys of the outer surface of the compactor and of the floor near the compactor door shall be taken periodically during compactor operations. The surveys will include analysis for gamma, beta, and alpha radiation
b. Schedule, triggering conditions, and methodology for replacement of the HEPA filter for the compactor; and
c. A description of how the proper waste batch size is determined, as required in procedure OP-1.4.23, to prevent waste from extruding from within during compaction.

3) The Licensee shall inspect the CPC compactor daily and maintain records of inspections. The Licensee must notify the Executive Director immediately in the event of 1) deformation of the compactor mounting bolts; 2) deformation of the compactor mounting frame; 3) stress crack formation in the concrete floor surrounding the compactor; or 4) any abnormal condition which may impact operations.

D. Processing and/or treatment of waste in the following methods:

1) Solidification/stabilization, chemical fixation, oxidation, reduction, and/or pH adjustment of liquid or solid radioactive waste using media acceptable to low level waste disposal sites utilizing the following:

a. a 55-gallon Enrico Barrel Mixer, or equivalent;
b. a Prentice Arm, or equivalent, in accordance with OP-1.4.11, titled "Prentice Arm Operations";
c. a 450-gallon paddle blender in accordance with OP-1.4.16, titled “Operation of the Marion Paddle Mixer, Model #3061”; and/or
d. an absorbent delivery system in accordance with OP-1.4.10, titled “Solidification and Void Space Verification at the LSA Pad” on the LSA pad or in accordance with LL-OP-9.9, titled "Solidification and Void Space Verification" on an unexcavated portion of the landfill footprint of the CWF or the FWF.

Unless stated otherwise in the license, the use of these methods is restricted to the Mixed Waste Treatment Facility.

2) Treatment of cesium-137 contaminated electric arc furnace dust (United States Environmental Protection Agency designation KO61) and incident related material utilizing the procedure described in module OP-1.4.7, titled "KO61 And Incident Related Material Stabilization Process." In addition to the procedures described in OP-

1.4.7, all doors to the stabilization building shall be closed and remain closed during the processing of the waste.

E. Interim storage of radioactive waste in the Bin Storage Unit 1, Bin Storage Unit 2, LSA Storage Area, Container Storage Building and the Stabilization Building. The Federal Waste Facility may also accept Federal waste for interim storage on a case-by-case basis as authorized by the Executive Director, if it is determined to be the best location to support the continued protection of human health and safety and the environment.
F. Reserved.
G. Shredding, in accordance with OP-1.4.12, titled "Shredder Operations."
H. Reserved.
I. Void filling and/or solidification of containerized waste inside a Modular Concrete Canister (MCC) on the LSA pad for disposal in the Compact Waste Facility or the Federal Waste Facility in accordance with applicable procedures, including OP-1.2.39 and OP-1.4.10. The integrity of the container and the MCC shall be protected from any operation that may cause damage or otherwise impact the integrity of the container or of the MCC. Should such damage to the integrity occur, the Licensee shall notify the TCEQ and take necessary remedial measures. Void filling and solidification shall not be performed during rain or snow.
J. Receipt of containerized radioactive waste by rail at the Railcar Pedestal Unloading Building (RPUB) in accordance with applicable procedures, including OP 1.2.40, and transfer of the containerized radioactive waste from the train to a truck for final delivery to the respective facility. The Licensee shall ensure that the train is not contaminated before releasing it and to perform contamination surveys of the RPUB weekly if waste was received at the RPUB that week. Contamination found in a railcar may be decontaminated at the RPUB according to procedures. The Licensee shall not open the waste container or packaging or repackage the containerized waste at the RPUB unless authorized by approved procedure.

189. The Licensee is authorized to perform at the storage and processing facility in-house decontamination of surface contaminated objects, contaminated through the course of the Licensee's authorized activities or as a consequence of shipment of radioactive waste to the Licensee's facility (e.g., containers, coverings, bracing, etc.), and/or surface contaminated objects received in waste streams, in the confines of the Mixed Waste Treatment Facility, utilizing the methods and procedures identified in "Decontamination of Material", OP-1.4.8.

190. No waste shall be commingled with material requiring a separate disposal methodology. Notwithstanding the Licensee's procedures, no waste from an authorized federal agency shall be commingled with waste from another generator.

191. Opening, sampling, inspecting and maintenance/repair of containers shall be restricted according to the following:

A. Waste containers containing radioactive waste meeting the requirements of low specific activity material, group I (LSA-I), as specified in Title 49 of the Code of Federal Regulations, Section 173.403, may be opened for sampling of the contents or container maintenance or repair in an approved, enclosed structure at the storage and processing facility.
B. Waste that is to be sampled and inspected in accordance with license condition 192 may be opened for sampling and inspection in designated areas.
C. All other waste containers shall only be opened in PERMACON or equivalent structures.

192. The Licensee may request a conditional exemption in accordance with 30 TAC §336.5(a) for specific

waste whose concentration values do not exceed the exemption concentration limits in RS-5.0.0, "Exemption Process for the RCRA Landfill". The unitary rule is applied for any waste with more than one radionuclide. Waste that meets these exemption criteria may be disposed of in the Licensee's RCRA disposal unit permitted by TCEQ under Permit #50358.

A. Modifying the exemption concentration limits in RS-5.0.0 will require a new radiological impact assessment that shall:

1) Include an assessment of the disposal of the waste in the Licensee's RCRA Permit #50358

2) Demonstrate how the radionuclide concentration, total activity, and volume values will not result in a radiation dose that could exceed 1 mrem/year to appropriate critical groups (e.g., inadvertent intruder or future site resident) for up to a thousand years.

3) Assess radionuclides with half-life values over 300 years to evaluate peak doses above 1 mrem/year that occur after a thousand years.

B. The Licensee's application process for an alternative exemption under 30 TAC §336.5(a) shall include a demonstration of acceptable exemption criteria, the Licensee's request for exemption concurrence, and executive director approval or denial as follows:

1) The Licensee shall classify each waste stream as Tier 1, Tier 2, or Tier 3 and approve the waste profile in accordance with OP-1.1, "Waste Profile Approval Process" prior to receipt. The Tier levels are defined as:

   a. Tier 1: average sum of fractions is less than 0.25 (< 25%) and the maximum concentration value does not exceed 0.30 (30%) of the exemption concentration limits in RS-5.0.0.
   b. Tier 2: average sum of fractions is between 0.25 (< 25%) and 0.75 (75%) and the maximum concentration value does not exceed 0.80 (80%) of the exemption concentration limits in RS-5.0.0.
   c. Tier 3: average sum of fractions is equal to or greater than 0.75 (75%) of the exemption concentration limits in RS-5.0.0.
   d. If the waste contains depleted uranium, it will be classified as Tier 3 regardless of the average sum of fraction or maximum concentration value.

2) The Licensee receives the radioactive materials, described in Part G of License Conditions 5, 6, 7 and 8 of this License, either from commercial generators or the federal government, for receipt at the radioactive waste storage and processing facility authorized by this license.

3) The Licensee will perform confirmatory analytical measurements and/or radiation surveys as appropriate according to RS-5.0.0. The Licensee will explain how the results of the confirmatory analytical measurements and/or radiation surveys compare to the exemption concentration values in RS-5.0.0.

4) For Tier 3 waste, if the results of the confirmatory analytical measurements and/or radiation surveys indicate that the waste shipment meets the exemption criteria,

   a. Then the Licensee submits an exemption request letter, including the results of the sample analysis and other relevant data as applicable, to the executive director.

b. The executive director will review the request and send the Licensee a letter either approving or denying the exemption request or requesting additional information within 21 days. If the request is denied, the Licensee is not authorized to exempt that waste under 30 TAC §336.5(a). The Licensee may reapply for the exemption at any time.

c. The executive director reserves the right to deny any exemption request for waste containing depleted uranium regardless if the uranium concentration values do not exceed the exemption concentration limits in RS-5.0.0.

5) For Tier 1 and 2 waste, if the results of the confirmatory analytical measurements and/or radiation surveys indicate that the waste shipment meets the exemption criteria, then the Licensee is authorized to exempt that waste under 30 TAC §336.5(a). The Licensee shall submit a notification to the executive director within 5 business days after disposal which is to include the approved profile package, manifest, waste analytical reports, and the verification reports as applicable.

C. Waste received by the Licensee will remain licensed radioactive material subject to all applicable regulations and license requirements until

1) For Tier 1 and 2 waste, when confirmatory analytical measurements and/or radiation surveys indicate that the waste shipment meets the exemption criteria,

2) For Tier 3 waste, the Licensee receives the letter from the executive director concurring that this waste meets the exemption criteria.

D. Waste that has been approved by the executive director as 30 TAC §336.5(a) exempt will not be counted towards any volume or activity limits in this license for radioactive material.

193. Reserved.

194. Radioactive material described in Parts G and H of License Conditions 5, 6, 7 and 8 shall only be transferred to the initial generator, to an appropriately authorized waste disposal facility, exempted under 30 TAC §336.5(a) and transferred to a RCRA hazardous waste disposal facility, or to an appropriately authorized waste processor. Documentation of recipient's authorization shall be maintained for inspection for a minimum of 5 years.

195. In addition to the limits specified by Conditions 5, 6, 7 and 8, the Licensee shall restrict possession of waste to the following conditions.

A. The total volume physically present shall not exceed 1,802,865 cubic feet and shall be further limited to the following building limitations:

1) Bin Storage Unit 1: 87,480 cubic feet.

2) Container Storage Building: 36,750 cubic feet

3) Stabilization Building: 8,000 cubic feet

4) LSA Storage Area: 1,500,000 cubic feet

5) Bin Storage Unit 2: 174,960 cubic feet

6) Federal Waste Facility: as authorized by the Executive Director

B. Any waste container shall be counted as a full container in the volume inventory unless it can be readily verified as empty.

196. All waste holding times at the storage and processing facility shall be limited to the following:

A. All waste received for purposes of processing, shall be initially processed within 30 days of placement within the Mixed Waste Treatment Facility. All waste shall be transferred out of the Mixed Waste Treatment Facility within 90 days of placement within the Mixed Waste Treatment Facility;

B. All waste shall be placed into interim storage or transferred to an authorized recipient within 365 days of the initial date of receipt; and

C. Commercial mixed waste that cannot be processed into a form that has a current disposal option shall be returned to the generator or an appropriately authorized waste processor within 180 days of determining the waste cannot be processed into a form that has a current disposal option.

D. Regardless of the holding time limits, waste with hazardous constituents requiring a permit issued by the TCEQ to possess, treat, and store, that is mixed waste, shall meet the conditions for treatability studies in 40 CFR 261.4(f)(5) or the conditions for accumulation of adequate quantities in 40 CFR 268.50. Holding times will be consistent with that permitted under the provisions of the Licensee's permit issued by the TCEQ.

1) Containers of such waste shall be clearly identifiable and each container shall bear legible and unique identification.

2) Records shall be maintained that identify the containers and their contents in terms of radionuclides, activity and volume for inspection by the executive director.

3) Written notifications of intent submitted to TCEQ for each treatability study and/or any requested extensions for holding times for specific containers or batches of mixed waste shall be maintained for inspection by the executive director to document that the waste in question is subject and in compliance with the holding time provisions.

4) Quarterly reports documenting compliance with this condition shall be made available during inspections.

197. All waste not in storage at the storage and processing facility shall be physically restricted in the following ways:

A. Waste meeting the requirements of low specific activity group I radioactive material, as specified in Title 49 of the CFR (as amended), shall be processed within the confines of the Stabilization Building; and all other waste shall be processed within the confines of a PERMACON, or equivalent, structure; or

B. Waste shall be packaged in accordance with Title 49 of the CFR (as amended) requirements while in transit between the Bin Storage Unit 1, Bin Storage Unit 2, LSA Storage Area, Container Storage Building, Stabilization Building, Federal Waste Facility, or offsite.

C. The Licensee is relieved of the requirements of interim storage and Part B of this license condition, for no more than 23,590 cubic feet of waste that requires additional packaging/over packs to meet US DOT, that is, 49 CFR, requirements. Such waste may be packaged in metal or polyethylene containers that meet the requirements for excepted packaging in 49 CFR when in storage or in transport between the Bin Storage Unit 1, Bin Storage Unit 2, LSA Storage Area, Container Storage Building, and Stabilization Building at the Licensee's facility. All other waste shall be packaged to meet US DOT transportation

requirements when in storage or in transit between the Bin Storage Unit 1, Bin Storage Unit 2, LSA Storage Area, Container Storage Building, and Stabilization Building at the Licensee's facility. Waste requiring a type A or B cask may be stored in packages or containers that can immediately be placed inside the appropriate cask to comply with Title 49 of the CFR and at a minimum meets the requirements for excepted packaging in 49 CFR when in storage or in transport between the bin Storage Unit 1, Bin Storage Unit 2, LSA Storage Area, Container Storage Building, and Stabilization Building at the Licensee's facility.

D. Waste stored in the Bin Storage Unit 1, Bin Storage Unit 2, LSA Storage Area, or Federal Waste Facility that is not contained within a High Integrity Container will be restricted to Low Specific Activity or Surface Contaminated Object, as defined by Title 10 of the Code of Federal Regulations (CFR) Part 71 (as amended), or depleted uranium. Waste that meets the requirements of being authorized federal agency waste may also be stored in a U. S. Department of Transportation Type B container, or a Dufrane Secure Environmental Container, or the equivalent. Waste requiring a type A or B cask may be stored in packages or containers that can immediately be placed inside the appropriate cask to comply with Title 49 of the CFR and at a minimum meets the requirements for excepted packaging in 49 CFR.

198. The Licensee shall maintain for inspection by the executive director an inventory of all waste possessed at the storage and processing facility under this license. The inventory shall show the radionuclide, date received, from who received, amount of activity, physical form, date processed, original and reassigned drum or container number, and the date transferred for disposal. In addition, the Licensee shall at least monthly generate a cumulative inventory that demonstrates compliance with License Condition Nos. 187, 195, 196, and 206 (including waste form requirements for interim storage), and the appropriate processing category limits of 30 TAC § 336.1207. The Licensee shall maintain a copy of the inventories, for a minimum of five (5) years from the date of generation, for inspection by the executive director.

199. A summary of all waste processing activities for the preceding calendar year shall be generated no later than March 1 of each year and maintained for inspection until disposition is authorized by the executive director. This report shall include total throughput for each individual process; all material received; all material transferred; all spills outside of primary containment; and a current inventory at the end of the report. Material transferred and received shall also be listed by Licensee. All categories shall include activity by isotope and total volume.

200. The Licensee shall notify the executive director in writing or via facsimile at least 3 working days in advance of shipping its low level radioactive waste off-site to a commercial treatment, storage, or disposal site.

201. Before transferring any waste for disposal that is stored in an area authorized for both radioactive waste storage by this license and hazardous waste storage by a TCEQ hazardous waste permit in accordance with 30 TAC Chapter 335, the licensee must verify the characterization of the waste to ensure that the waste will be transferred to the proper disposal facility. Documentation of this evaluation shall be retained and be available for inspection by the executive director.

202. The Licensee must secure all applicable licenses, permits, and/or authorizations from the appropriate regulatory authorities before engaging in the authorizations granted by this license for the storage and processing facility.

203. Modification of the storage and processing facility or the processes of the storage and processing facility described in the documents listed in License Condition No. 192 is prohibited except as authorized pursuant to amendment of this license.

A. The Licensee may modify the facility as requested in the Licensee's letter dated August 21, 2000 regarding the Permacon and shall construct the loading bay and employee center attached to or abutting the Permacon in accordance with the following:

1) Drawing titled "Loading Bay & Employee Center Addition", Sheet A1, dated July 10, 2000, Rev. 1 dated July 10, 2000, depicting Floor Plan, from the firm of Nesser, Prestidge, Smith, Razloznik Architects, Inc. of Carlsbad, NM, received in the Bureau of Radiation Control on October 10, 2000;

2) Drawing titled "Loading Bay & Employee Center Addition", Sheet A2, 4 of 9, dated July 10, 2000, Rev 1 dated July 20, 2000, depicting Enlarged Partial Floor Plan, from the firm of Nesser, Prestidge, Smith, Razloznik Architects, Inc. of Carlsbad, NM, received in the Bureau of Radiation Control on October 10, 2000;

3) Drawing titled "Loading Bay & Employee Center Addition", Sheet A3, 5 of 9, dated July 10, 2000, Rev 1 dated July 20, 2000, depicting (1) North, (2) East, (3) South and (4) West Exterior Elevations, from the firm of Nesser, Prestidge, Smith, Razloznik Architects, Inc. of Carlsbad, NM, received in the Bureau of Radiation Control on October 10, 2000;

4) Drawing titled "Loading Bay & Employee Center Addition", Sheet A4, 6 of 9, dated July 10, 2000, Rev 1 dated July 20, 2000, depicting (1) Enlarged Partial Building Section and (2) Building Section, from the firm of Nesser, Prestidge, Smith, Razloznik Architects, Inc. of Carlsbad, NM, received in the Bureau of Radiation Control on October 10, 2000;

5) Drawing titled "Loading Bay & Employee Center Addition", Sheet A5, 7 of 9, dated July 10, 2000, Rev 1 dated July 20, 2000, depicting (1) Enlarged Partial Building Section, (2) Enlarged Partial Building Section, and (3) wall section, from the firm of Nesser, Prestidge, Smith, Razloznik Architects, Inc. of Carlsbad, NM, received in the Bureau of Radiation Control on October 10, 2000;

6) Drawing titled "Loading Bay & Employee Center Addition", Sheet S1, 1 of 2, dated July 10, 2000, Rev 1 dated July 20, 2000, identified as Foundation Plan depicting (1) Bollard Detail and (2) Column Tie Footing, (3) Grade Beam Footing @ Door, (4) Grade Beam Footing, and (5) Main Frame Footing, from the firm of Nesser, Prestidge, Smith, Razloznik Architects, Inc. of Carlsbad, NM, received in the Bureau of Radiation Control on October 10, 2000;

7) Drawing titled "Loading Bay & Employee Center Addition", Sheet S2, 2 of 2, dated July 10, 2000, Rev 1 dated July 20, 2000, identified as Foundation Plan and Framing Plan, from the firm of Nesser, Prestidge, Smith, Razloznik Architects, Inc. of Carlsbad, NM, received in the Bureau of Radiation Control on October 10, 2000;

8) Drawing titled "Loading Bay & Employee Center Addition", Sheet M101, dated July 19, 2000, identified as Plumbing Plan, from the firms of Smith Engineering Company of Albuquerque, NM, James O. Coupland, and Nesser, Prestidge, Smith, Razloznik Architects, Inc. of Carlsbad, NM, received in the Bureau of Radiation Control on October 10, 2000;

9) Drawing titled "Loading Bay & Employee Center Addition", Sheet M201, dated July 19, 2000, depicting (1) HVAC Plan and (2) Enlarged Mechanical Plan, from the firms of Smith Engineering Company of Albuquerque, NM, James O. Coupland, and Nesser,

Prestidge, Smith, Razloznik Architects, Inc. of Carlsbad, NM, received in the Bureau of Radiation Control on October 10, 2000;

10) Drawing titled "Loading Bay & Employee Center Addition", Sheet M401, dated July 19, 2000, depicting (1) Filtered Exhaust System Control Diagram, (2) Breathing Air Alarm System, and (3) Air Handling Unit Detail, from the firms of Smith Engineering Company of Albuquerque, NM, James O. Coupland, and Nesser, Prestidge, Smith, Razloznik Architects, Inc. of Carlsbad, NM, received in the Bureau of Radiation Control on October 10, 2000;

11) Drawing titled "Loading Bay & Employee Center Addition", Sheet M501, dated July 19, 2000, depicting (1) Gooseneck Detail, (2) Holding Tank Detail, (3) Exhaust Fan EF-3 Support, (4) Valve Box Detail, (5) Vent Thru Roof Detail, (6) Water Heater Detail, (7) Flue Thru Roof Detail, and (8) Clean Out Detail, from the firms of Smith Engineering Company of Albuquerque, NM, James O. Coupland, and Nesser, Prestidge, Smith, Razloznik Architects, Inc. of Carlsbad, NM, received in the Bureau of Radiation Control on October 10, 2000;

12) Drawing titled "Loading Bay & Employee Center Addition", Sheet M602, dated July 19, 2000, depicting the Equipment Schedule, from the firms of Smith Engineering Company of Albuquerque, NM, James O. Coupland, and Nesser, Prestidge, Smith, Razloznik Architects, Inc. of Carlsbad, NM, received in the Bureau of Radiation Control on October 10, 2000;

13) Attachment B titled "Submittals of Ventilation Equipment Specifications", to the August 21, 2000 letter;

14) Attachment C titled "Map of Equipment Locations", to the August 21, 2000 letter;

15) Letter dated October 19, 2000 pertaining to the operation of the Permacon ventilation system and the oversight of the Permacon modification and addition of the loading bay and employee center;

16) The responses to items 6, 7, 8, 9, 10, 12, 13, and 14 in the Licensee's letter dated October 6, 2000 pertaining to the facility modifications (i.e., Permacon) and additions (i.e., loading bay and employee center);

17) The air effluent monitoring system for the Permacon shall conform to the description provided in the letter dated October 10, 2000, including the attachments titled "Waste Control Specialists Stack Sampling Configuration" and "Generic Stack Schematic"; and

18) The term "air lock" used in the Licensee's submissions describing this facility modification shall be understood to refer to the feature identified as "loading bay" on the submitted drawings.

B. All waste (liquid and solids) in the holding tank receiving waste from the decontamination area of the Employee Center shall be disposed of as radioactive waste.

C. The Licensee may modify the bin storage area as described in the letters dated January 14, 1998 and May 3, 1999.

D. The Licensee may modify the Stabilization Building as described in the letter dated January 14, 1998 and May 3, 1999.

E. The Licensee may construct and utilize for storage, Bin Storage Unit 2 and LSA Storage Area pads for interim waste storage in accordance with inspection frequencies and design criteria specified in letters dated May 19, 2004, August 12, 2004, October 28, 2004, and June 15,

2006. Waste container types for the Bin Storage Unit 2 pad, their placement and content characterization shall be in accordance with Item 2 of letter dated July 27, 2004.

F. The Licensee may modify the Mixed Waste Treatment Facility as described in the letters dated November 16, 2007 (with attached report WCS Project #0703 MWTF Ventilation Upgrades, Waste Control Specialists LLC, RPS Project No. 07.0109, Revision 2 dated August 19, 2007), April 24, 2008, and June 4, 2008.

G. The Licensee may modify the ventilation of the Mixed Waste Treatment Facility consistent with the conditions of this license and as described in the application dated July 15, 2011.

H. The Licensee may modify the LSA pad as described in the amendment application dated May 4, 2012 and the drawings submitted electronically June 7, 2012.

1) The Licensee shall retain a geotechnical engineer for construction activities of the LSA pad. The geotechnical engineer shall review final design plans and specifications; implement the geotechnical investigation into design plans and specifications; provide geotechnical observation and testing services during the project construction phase; and certify completion of the construction.

2) The loads on the LSA pad shall not exceed the load values in the report prepared by Terracon Consultants, Inc. in Attachment 3 of the May 4, 2012 amendment application.

3) The licensee shall inspect the caliche surface monthly for aggregate base loss and rutting and assess the serviceability of the caliche surface. If rutting or aggregate loss is observed to be greater than 3 inches, the licensee shall place additional crushed caliche; re-grade the caliche surface; and compact the caliche to improve the serviceability of the surface.

I. The Licensee may modify the Railcar Pedestal Unloading Building consistent with the conditions of this license and as described in the application dated April 30, 2012 and letters dated July 11, 2012, July 13, 2012, July 20, 2012, and July 24, 2012.

J. Waste streams containing free standing liquids may be stored before and/or after the solidification process described in the license amendment application dated September 26, 2012 for a period no greater than 365 days. These waste streams are approved for storage within an MCC, SEC, or equivalent on the LSA pad.

204. In accordance with the commitments and procedures submitted in the letters dated February 6, 2006 and October 27, 2006 (with attachments), the Licensee shall ensure liquids discharged from the chemistry laboratory operations shall be directed into a dedicated laboratory sump system or into containers within the laboratory to prevent discharges of contaminated water into the environment. The sump system shall be inspected and monitored regularly. Fluids removed from the sump shall be analyzed for radiological and hazardous chemical components. If contaminated, the fluids shall be treated and disposed in compliance with regulatory standards and requirements stipulated in this license.

205. The following conditions are to be maintained in Stabilization Room 101 of the Mixed Waste Treatment Facility:

A. A nominal (i.e., ± 20%) minimum negative static pressure (SP) of 0.1 inches of water column, with respect to ambient outdoor conditions, shall be maintained at all times during waste processing operations. The negative SP requirement may be waived during maintenance and testing activities when no wastes are present and exposed to the room environment.

B. The management of waste materials, which are capable of producing a flammable or explosive atmosphere due to emitted gases, vapors, or particulates, is prohibited.

206. In accordance with the Order (Docket No. 70-7005), dated October 26, 2009, issued by the United States Nuclear Regulatory Commission (NRC),

A. the Licensee may possess special nuclear material (SNM) within the restricted area of the Licensee's storage and processing facility provided that

1) Concentrations of SNM in individual waste containers and/or during processing shall not exceed the following values:

SNM Radionuclide	Operational Limit (gram SNM/gram waste)	Measurement Uncertainty (gram SNM/gram waste)
U-233	4.7 E - 4	7.1 E - 5
U-235 (10 percent enriched)	9.9 E - 4	1.5 E - 4
U-235 (100 percent enriched)	6.2 E - 4	9.3 E - 5
Pu-239	2.8 E - 4	4.2 E - 5
Pu-241	2.2 E - 4	3.2 E - 5

When mixtures of these SNM radionuclides are present in the waste, the sum-of-the-fractions rule, as illustrated below, should be used.

$$\frac{U-233conc}{U-233\lim}+\frac{100wt\%U-235conc}{100wt\%U-235\lim}+\frac{10wt\%U-235conc}{10wt\%U-235\lim}+\frac{Pu-239conc}{Pu-239\lim}+\frac{Pu-241conc}{Pu-241\lim}\le 1$$

The measurement uncertainty values in column 3 above represent the maximum one-sigma uncertainty associated with the measurement of the concentration of the particular radionuclide.

The SNM must be uniformly distributed throughout the waste, such that the limiting concentrations must not be exceeded on average in any contiguous mass of 600 kilograms.

2) The mass concentration of carbon, fluorine, and bismuth in the waste must be limited as follows

SNM Isotope	Carbon	Fluorine	Bismuth
U-233	28 wt%	34 wt%	34 wt%
U-235 (10 percent enriched)	25 wt%	35 wt%	31 wt%
U-235 (100 percent enriched)	41 wt%	42 wt%	33 wt%
Pu-239	43 wt%	43 wt%	34 wt%
Pu-241	37 wt%	39 wt%	32 wt%

For waste containing mixtures of C, F, and Bi, the sum of the weight fractions of C, F, and Bi shall

be compared to the most restrictive maximum allowable weight fractions for any one of those elements. Similarly, where mixtures of radionuclides are present in the waste, the limiting maximum allowable weight fraction of C, F, and Bi shall be applied. The presence of the above materials will be determined and documented by the generator, based on process knowledge or testing

3) Waste accepted shall not contain total quantities of beryllium, hydrogenous material enriched in deuterium, or graphite above one tenth of one percent of the total weight of the waste. The presence of the above materials will be determined and documented by the generator, based on process knowledge, or testing

4) Possession of highly water soluble forms of SNM shall not exceed the amount of SNM of low strategic significance defined in 10 CFR 73.2. Highly soluble forms of SNM include, but are not limited to: uranium sulfate, uranyl acetate, uranyl chloride, uranyl formate, uranyl fluoride, uranyl nitrate, uranyl potassium carbonate, uranyl sulfate, plutonium chloride, plutonium fluoride, and plutonium nitrate. The presence of the above materials will be determined and documented by the generator, based on process knowledge or testing

5) Processing of mixed waste containing SNM will be limited to chemical stabilization (i.e., mixing waste with reagents). For batches with more than 600 kilograms of waste, the total mass of SNM shall not exceed the concentration limits in License Condition 206.A.1, times 600 kilograms of waste.

6) Prior to shipment of waste the Licensee shall require generators to provide a written certification containing the following information for each waste stream:

   a. Waste Description. The description must detail how the waste was generated, list the physical forms in the waste, and identify uranium chemical composition.
   b. Waste Characterization Summary. The data must include a general description of how the waste was characterized (including the volumetric extent of the waste, and the number, location, type, and results of any analytical testing), the range of SNM concentrations, and the analytical results with error values used to develop the concentration ranges.
   c. Uniformity Description. A description of the process by which the waste was generated showing that the spatial distribution of SNM is homogeneous or other information supporting spatial homogeneity.
   d. Manifest Concentration. The generator must describe the methods to be used to determine the concentrations on the manifests. These methods could include direct measurement and the use of scaling factors. The generator must describe the uncertainty associated with sampling and testing used to obtain the manifest concentrations.

The Licensee shall review the above information and, if adequate, approve in writing this pre-shipment waste characterization and assurance plan before permitting the shipment of a waste stream. This will include statements that the Licensee has a written copy of all the information required above, that the characterization information is adequate and consistent with the waste description, and that the information is sufficient to demonstrate compliance with subparts (1) through (4) of this condition. Where generator process knowledge is used to demonstrate compliance with subparts (1), (2), (3), or (4), the Licensee shall review this information and determine when testing is required to provide additional information in assuring compliance with the subparts. The Licensee

shall retain this information as required by the State of Texas to permit independent review

At the time the waste is received, the Licensee shall require generators of SNM waste to provide a written certification with each waste manifest that states that the SNM concentrations reported on the manifest do not exceed the limits in subpart (1) of this condition and that the waste meets subparts (2) through (4) of this condition

The Licensee shall require generators to sample and determine the SNM concentration for each waste stream, not to include sealed sources, at a frequency of once per 600 kg if the concentrations are above one-tenth the SNM limits of subpart (1) of this condition. The measurement uncertainty shall not exceed the uncertainty value in subpart(1) of this condition and shall be provided on the written certification

7) The Licensee shall sample and determine the SNM concentration for each waste stream, not to include sealed sources, at a frequency of once per 600 kg if the concentrations are above one tenth the SNM limits of subpart(1) of this condition. This confirmatory testing is not required for waste to be disposed of at the United States Department of Energy's Waste Isolation Pilot Project (WIPP) facility located near Carlsbad, New Mexico.

8) The "WIPP incident" is the February 14, 2014, unplanned radiation release event at the DOE WIPP facility in New Mexico. The following relate to the Licensee storing DOE transuranic waste that originated at the Los Alamos National Laboratory (LANL), which are destined to be disposed of at the DOE WIPP facility (i.e., "LANL waste"), at either the Storage and Processing Facility or the Federal Facility Waste Disposal Facility:

   a. The following conditions are applicable to LANL waste stored at the Federal Facility Waste Disposal Facility and other SNM bearing waste stored or disposed of at the Federal Facility Waste Disposal Facility:

      i. The following waste is allowed to be stored at the Federal Facility Waste Disposal Facility: LANL waste in accordance with the concentration-based limits specified in subparts 1 through 7, provided that it is in Standardized Waste Boxes (SWBs) analyzed to be safe in the DOE “Nuclear Critical Safety Evaluation,” WIPP-016, Rev. 4. The lids of the SWBs shall be bolted or similarly secured to the body and the SWBs shall be placed inside Modular Concrete Canisters (MCCs) consistent with the configurations analyzed in WIPP-016.
      ii. The LANL waste shall be isolated from other SNM-bearing waste by a minimum of 6.096 meters (20 feet).
      iii. The LANL waste in MCCs shall be stacked no more than one MCC high.

   b. The following conditions are applicable to all the LANL waste stored at either the Storage and Processing Facility or the Federal Facility Waste Disposal Facility:

      i. The Licensee shall follow the general reporting and recordkeeping requirements of 10 CFR part 73 that are applicable to those who possess SNM of 1 gram or more. Those requirements are: (1) notification to the NRC and the inspector for the TCEQ, Critical Infrastructure Division within 1 hour of discovery of any unauthorized removal of SNM which WCS is authorized to possess; and (2) maintenance of a recordkeeping program showing the receipt, inventory, acquisition, transfer, and disposal of all

SNM in the Licensee's possession.

ii. The contents and matrices of the LANL waste in the inner containers shall conform to the description in the Licensee's non-public information.

iii. The physical security plan for the LANL waste shall be maintained to specifically include detection, assessment, and response methods and procedures for the LANL waste for as long as the LANL waste is at the Licensee's facility.

iv. The Licensee is allowed to possess the LANL waste for a maximum of 2 years (December 23, 2016).

v. The LANL waste shall remain unopened in the inner container in which it was shipped, unless the Licensee needs to take an action on one of the inner containers based on knowledge from DOE's investigation of the WIPP incident. Only one inner container may be open at a time.

vi. The Licensee shall keep NRC and the executive director informed of the status of the DOE investigation of the WIPP incident. If DOE determines that some of LANL waste at the Licensee's facility was similar to the waste that DOE determines to have contributed to the WIPP incident, then the Licensee will notify the NRC and the executive director.

9) The Licensee shall notify the NRC, Region IV office and the inspector for the TCEQ, Critical Infrastructure Division, within 24 hours if any of the above subparts of this condition are violated. A written notification of the event must be provided within 7 days to both agencies

10) The Licensee shall obtain NRC approval and secure an amendment to this license prior to changing any activities associated with the subparts of this condition.

11) The Director of the Office of Nuclear Material Safety and Safeguards (or designee), may, in writing, relax or rescind any of the above conditions upon demonstration by WCS of good cause.

B. The Licensee shall manage waste containing SNM in accordance with the order from the NRC, as specified in License Condition 206.A of this license, and the Licensee's operational procedures titled "SNM Exemption" designated OP-1.2.22.

C. Notwithstanding the Licensee's procedures, the Licensee is authorized to possess transuranic waste (waste generated by USDOE containing alpha emitting nuclides with an atomic number greater than 92) in concentrations greater than 100 nanocuries per gram (nCi/g) and greater than a 20 year half-life. Prior to receipt of transuranic waste with concentrations exceeding 100 nCi/g, the Licensee shall obtain an executed, written agreement from an authorized federal agency. The agreement shall meet the terms of the agreement specified in License Condition 11.B of this license. Furthermore, in no respect shall this authorization be construed as to allow the limitations specified in Part A of this condition to be exceeded or violated.

Additional Requirements

207. Except as specifically provided otherwise by this license, the Licensee must possess, store, process and dispose of low-level radioactive waste authorized by the license in accordance with statements and representations contained in the following:

A. Land Disposal Facility

- Original land disposal facility application dated August 3, 2004, and subsequent revisions.
- Application for administrative amendment dated November 17, 2009 requesting authorization to change the RSO.
- Application for administrative amendment dated March 5, 2010 requesting authorization for revised Quality Assurance Plan and Quality Assurance Procedures.
- Application for minor amendment requesting authorization to document impacts of installation of rail loop, document disposal facility reconfiguration and constructions changes, and modification of environmental monitoring details, dated January 12, 2010.
- Application for Administrative Amendment to Remove Monitoring Well OAG-6, dated February 1, 2011
- Application for administrative amendment dated February 22, 2011 and the revised application dated April 15, 2011 requesting authorization to alter select monitoring wells and another administrative application dated April 6, 2011 to extend time to complete air hydraulic conductivities testing.
- Application for administrative amendment dated April 8, 2011 requesting authorization to handhole to manhole changes, WCS Change Request (CR)-034, drawing LC.2.27 note callout, WCS CR-039, and change of elevation of the non-contact stormwater piping discharge into Compact Waste Disposal Facility sedimentation pond, WCS CR-038. This authorization excludes the pad configuration request portion of the WCS CR-038.
- Application for administrative amendment to Radioactive Material License No. R04100 requesting authorization to implement improvements to vadose zone monitoring system neutron logging access tubes and below-liner sensor system access tubes dated April 26 2011 and the letter supplementing the administrative amendment application dated May 31, 2011.
- Application for administrative amendment dated May 9, 2011 requesting authorization for design changes to provide additional common area drainage information (LL-010), modify routing of administration building sanitary sewer line (LL-028), and modify shape of contact water storage tank secondary containment drainage waterway (LL-031).
- Application for administrative amendment dated May 24, 2011 requesting authorization for design changes to sanitary septic system.
- Application for administrative amendment dated July 11, 2011 requesting authorization for design changes to the north utility corridor north of Federal Facility Waste Disposal Facility, (LL-032).
- Application for administrative amendment dated June 24, 2011 requesting authorization for design changes to allow penetrations of the foundation footing for the CWF decontamination building only. Only changes the drawing S1.2 as provided in revision 1, dated June 11, 2011 are approved. The proposed changes shown in the draft revision 1, dated June 14, 2011, to the drawing G.11 of record (previously approved revision 0, dated June 1, 2009) are not approved. Therefore, this conditional authorization is applicable only to CWF decontamination building and does not apply to the other buildings at the LLRW facility.
- Application for minor amendment dated May 3, 2011 requesting authorization for design changes to the Compact Waste Disposal Facility (CWF) Contact Water Secondary Containment Structure, and the response to the First Technical Notice of Deficiency dated June 14, 2011.
- Application for minor amendment dated June 6, 2011 requesting authorization for design changes to implement surface stormwater conveyance and sedimentation pond inlet structure improvements and in the September 29, 2011 revision to the application.
- Application for minor amendment dated July 14, 2011 to authorize design changes to the stormwater drainage diversion, and in the September 29, 2011 and October 14, 2011 revisions to the application.
- Application for minor amendment dated July 22, 2011 requesting authorization for design changes to the CWF access ramps and red bed bench ditch drainage system and in the September 29, 2011 and October 17, 2011 revisions to the application.

- Application for administrative amendment dated July 27, 2011, and revisions to the amendment application dated September 1, 2011, October 14, 2011, and November 4, 2011 requesting authorization for design and associated procedural changes to the security and fire protection system.
- Application for administrative amendment dated May 6, 2011 and associated amendment revisions dated August 11, 2011, September 1, 2011, September 29, 2011, and November 4, 2011 requesting authorization for design changes to the FWF contact water storage system piping and truck pad relocation as a result of not installing the two 500,000 gallon tanks to support the FWF Non-Containerized Disposal Unit (NCDU).
- Application for administrative amendment dated June 29, 2011 and associated amendment revisions dated October 11, 2011 requesting authorization for design modifications to the Laboratory, Administration and TCEQ Resident Inspector buildings at the land disposal facility.
- Application for minor amendment dated August 19, 2011 and revisions dated November 23, 2011 to authorize certain design modifications to the potable water distribution system in land disposal facility.
- Application for administrative amendment dated August 22, 2011 and associated amendment revisions dated October 12, 2011 requesting authorization for design changes to construct underground electrical distribution instead of overhead electrical distribution system and revisions to exterior lighting.
- Application for minor amendment dated August 22, 2011 and associated amendment revisions dated on October 27, 2011 requesting authorization for design changes to emergency shower and eyewash stations in land disposal facility buildings.
- Application for administrative amendment dated August 30, 2011 requesting authorization for the use of new and revised procedures. The authorization for use of new and revised procedures excludes all the environmental procedures.
- Errata to Application for Administrative Amendment dated September 16, 2011
- Application for administrative amendment dated October 14, 2011 requesting authorization for the use of new and revised procedures including the Waste Acceptance Plan. The authorization revises procedures submitted to conform to the requirements in Attachment C of this license, and excludes the submitted Radiological Environmental Monitoring Program. Waste acceptance conditions have been relocated and consolidated by removal from the Receipt, Acceptance, and Inspection Requirements section of the license for incorporation into revised Attachment C to this license. Revised Attachment C specifically details regulatory requirements on limitations and prohibited wastes, waste types and waste streams allowed, WCS' waste generator audit and certification program, waste classification, waste characterization, waste tracking, waste treatment, waste stabilization, waste minimization, waste form and waste packaging criteria, waste container weight categories, transportation references, and waste acceptance by TCEQ resident inspectors.
- Specific construction requirements are deleted based on information in a Licensee's letter report submitted on December 1, 2011 that documents how the construction requirements have been addressed, with the exception of construction conditions related to asphalt paving. These pending asphalt paving conditions are placed in Attachment D of this license. Conditions regarding elevation adjustments to environmental monitoring wells are removed, based on a December 2, 2011 letter report submitted by Licensee that documents the final groundwater monitoring well adjustments.
- Environmental procedures originally submitted as a part of the August 30, 2011 administrative amendment application seeking authorization for use of new and revised procedures.
- Application for Administrative Amendment to Authorize Environmental Monitoring Program Refinements, dated December 9, 2011, and associated revisions submitted on December 28, 2011 and December 30, 2011.

- Application for Administrative Amendment to incorporate field changes to the engineering design made during construction, received on February 6, 2012 and subsequent revisions to the application dated February 28, 2012 and April 4, 2012.
- Two revised procedures LL-OP-1.2.39, *Containerized LLRW Disposal Operations* and LL-OP-1.4.24, *LLRW Cask Handling and Unloading* submitted electronically on April 18, 2012 providing revisions to procedures submitted as part of Amendment 12 in regard to waste disposal and safety.
- Application for Minor Amendment to Radioactive Material License No. R04100 to Authorize Disposal of Non-party Compact Waste, dated November 18, 2011.
- Amendment Application submitted December 14, 2011, and referencing a previous submittal dated August 13, 2010 and subsequent revision dated March 23, 2012.
- Application for Amendment submitted May 15, 2012 and supporting documents submitted May 18, 2012 to modify License Condition 143 authorizing additional lower classes of waste.
- Application for Amendment submitted January 25, 2011 and revised on October 4, 2011 to include treatment of contact water generated by LLRW disposal related activities in on-site wastewater treatment facilities. Application for Amendment submitted August 2, 2011 and revised on December 1, 2011, April 12, 2012, and July 13, 2012 to modify the license-approved design for the FWF access ramps and red bed bench drainage system. Application submitted January 4, 2012, revised and resubmitted July 20, 2012 to modify License Condition 143, Table 2 to authorize disposal of non-utility decommissioning waste streams. Application for Amendment submitted April 30, 2012 and revised on July 13, 2012 to update as-constructed conditions for the FWF. Application for Amendment submitted April 30, 2012 requesting to remove License Condition 97 with certain provisions.
- Application for Amendment to update specified license conditions dated January 22, 2013.
- Application dated November 7, 2012 to add the definition of "in transport" to the license concerning waste containing SNM. Application dated November 12, 2012 and revised on February 8, 2013 for the approval of disposal of bulk class A waste using in-cell non-containerized disposal units. Application dated February 4, 2013 for minor amendment to update specified license conditions. Application dated March 1, 2013 to update radiation safety license conditions. Application dated March 6, 2013 to remove License Condition 84 followed by plugging and abandonment of experimental systems. Application dated March 14, 2013 to change the radiation safety officer.
- Application for Amendment dated April 26, 2013 to modify license condition 48.
- Application for Amendment dated June 28, 2013 and revisions dated July 17, 2013 and July 31, 2013 to update license conditions relating to implementation of a consolidated Radiological Environmental Monitoring Program (REMP).
- Application for Amendment dated August 2, 2013 to update license condition 5.C and 5.D.
- Application for Amendment dated August 5, 2013, revision dated October 28, 2013, and supplements dated February 17, 2014 and February 21, 2014 to expand the Compact Waste Facility horizontally and vertically to allow 9,000,000 cubic feet of total waste volume; to allow an increase in CWF decay corrected radioactivity through minor amendment; and to expand the Federal Waste Facility horizontally and vertically to replace the Non-Containerized Disposal Unit (NCDU).
- Application for Amendment dated August 5, 2013, revision dated November 22, 2013, and supplement dated January 28, 2014 to remove the C-14 limit in the Compact Waste Disposal Facility, remove the C-14, Tc-99 and I-129 limits in the Federal Waste Disposal Facility, authorize the disposal of large quantities of depleted uranium, and to authorize the disposal of all Class A, B and C waste.
- Application for Amendment dated August 8, 2013 and supplements dated December 13, 2013 and February 28, 2014 to revise the financial assurance amounts and to implement a methodology to update the financial assurance annually without amending the license.
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B. Storage and Processing facilities

- Storage and processing facility application dated January 24, 1997 and amendment dated May 2, 1997, including Appendices Volume I-V, Site and Facility Drawings, and Drawing Specification;
- amendment applications dated July 15, 2011, May 4, 2012, April 30, 2012, September 26, 2012, and February 22, 2013;
- letters dated January 14, 1998 (signed by Allen Messenger); March 5, 1998 (with Andrews Site Organizational Chart and vice president operations/facility manager, radiation safety officer, and operations manager position descriptions attachments) and October 6, 1998 (with attachments); February 3, 1999; and April 23, 1999 (with attachments and enclosures, including WCS Work Instructions for CMDU2, dated April 9, 1999, WI99-1.2 and Attachment A to WI99-1.2); May 3, 1999 (signed by Allen Messenger); September 9, 1999 (with attachments), October 6, 1999 (with attachments, including WCS Work Instruction for the Commodore D/2 Unit, WI99-1.16) and October 7, 1999 (with attachments); August 21, 2000 (with attachments); October 6, 2000 (with attachments); October 10, 2000 (with enclosures titled "Waste Control Specialists Stack Sampling Configuration" and "Generic Stack Schematic"); December 22, 2000 (with enclosure titled "SL2 Description and Information" consisting of 7 pages); May 23, 2003 (signed by Stephen L. Cook, P.E.); October 28, 2004; February 6, 2006; October 27, 2006 (with attachments); November 16, 2007 (with attached report WCS Project #0703 MWTF Ventilation Upgrades, Waste Control Specialists LLC, RPS Project No. 07.0109, Revision 2 dated August 19, 2007), April 24, 2008, June 4, 2008, June 12, 2012, June 28, 2012, July 10, 2012, and July 11, 2012;
- Procedure titled "Processing Mixed Waste," Issue Date: September 18, 1998, Rev. 1 (replaces Rev. 0);
- Procedure titled "Receipt and Storage of Radioactive and Mixed Waste," Issue Date: September 18, 1998, Rev. 1 (replaces Rev. 0);
- Procedure titled"KO61 and Incident Related Material Stabilization Process," reference no.: OP-1.4.7, Issue Date: September 18, 1998, Rev. 1 (replaces Rev. 0);
- Procedure titled "Survey Sample Analysis and Activity Calculation," reference no.: RS-3.3.62, Issue Date: June 23, 1998, Rev. 0.
- Procedure titled "Prentice Arm Operations", reference no.: OP-1.4.11, Revision 0, Issue Date August 18, 2000;
- Procedure titled "Shredder Operations", reference no.: OP-1.4.12, Revision 0, Issue Dated August 18, 2000;
- Procedure titled "Decontamination of Material", reference no.: OP-1.4.8, Revision 0, Issue Date April 25, 1999;
- Procedure titled "Release of Items from Controlled Areas and the Facility", reference no.: RS-4.4.1, Revision 1, Issue Date January 16, 2001 (excluding Section 3.7), new section 4.6 (see letter dated May 17, 2004), and Sampling Protocol reference no.: AL-2.0.1, Revision 0;
- Responses for TDH dated January 16, 2001 (enclosure of letter dated January 16, 2001);
- Procedure titled "Special Nuclear Material Exemption Certification", reference no.: OP-1.2.22, Revision 0 (With respect to special nuclear material, the provisions of this procedure will supersede any other procedures in which there is conflict, the word "should" in these procedures shall be interpreted as meaning "shall", and the title of the referenced procedure RS-1.4.2 is understood to actually be "Chain of Custody Record".);
- Procedure titled "Chain of Custody Record", reference no.: RS-1.4.2, Revision 5, Effective Date August 11, 2000;
- Procedure titled "Operation of the Marion Paddle Mixer, Model #3061", reference no.: OP-1.4.16 Revision 0, Issue Date May 7, 2004.
- Procedure titled "Compactor Operations", reference no.: OP-1.4.23, Rev. 0 as revised in accordance with License Condition 188.

C. Title 30 of the TAC Chapter 336 shall prevail over statements contained in the above documents, unless such statements are more restrictive than the regulations.
D. Reserved
E. The Licensee shall comply with the requirements described in Subpart B of 10 CFR Part 37 Background Investigations and Access Control Program. The Licensee shall notify the executive director within 24 hours if the results from a criminal history records check indicate that an individual is identified on the FBI's Terrorist Screening Data Base.

208. All written submissions to the executive director as required by this license shall be made to the following:

A. For submissions by U. S. Postal Service:

Attn: Charles Maguire, Director
Radioactive Materials Division
Texas Commission on Environmental Quality
P. O. Box 13087
Mail Code – 233
Austin, Texas 78711-3087

B. For Submissions by facsimile transmission, the transmission should be addressed to the attention of the Radioactive Material Licensing Section, Radioactive Materials Division and sent to the following number:

(512) 239-6464

C. For submission of portable document file (pdf) documents by electronic mail, address to the following: Charles.Maguire@tceq.texas.gov

209. If there is a conflict between a condition of this license, statements contained in the application materials, and/or applicable provisions of Title 30 of the Texas Administrative Code, the most stringent provision shall prevail.

Date: December 7, 2015

For the Commission

Attachment A
Reserved

License Number	Amendment Number 29
R04100	December 7, 2015

Attachment B
Reserved

Attachment C
Compact Waste Disposal Facility Waste Acceptance Criteria

1.0 General Acceptance Information

The Compact Waste Disposal Facility (CWF) Waste Acceptance Criteria (WAC) is incorporated into this license to provide specific criteria for acceptance of low-level radioactive waste at the CWF in accordance with Title 30, Texas Administrative Code (TAC), Chapter 336 and this license. This WAC only applies to waste acceptance at the CWF. Conflicts between this WAC and any waste acceptance plan or other procedures for receipt, inspection, tracking, verification, or acceptance of waste shipments, will be addressed on a case-by-case basis by the TCEQ. Any variances from this WAC may require an application for amendment to Radioactive Material License No. R04100. Variances, revisions, or changes from this WAC will be evaluated by the Texas Commission on Environmental Quality (TCEQ) on a case-by-case basis for making license amendment determination. The executive director may accept, on a case-by-case basis, revisions to WAC provisions which do not affect human health and the environment, provided written notification to the executive director is made by the Licensee as soon as practicable. All other changes to the WAC are subject to review under 30 TAC Chapter 305.

The TCEQ, on behalf of the State of Texas, is the owner and is the regulator of the CWF. Title of commercial waste received and accepted at the CWF shall be transferred to the State of Texas at the time the waste is accepted. The State of Texas and TCEQ are indemnified under the terms of this license. Transfer of title of commercial waste to the State of Texas does not relieve generators or potentially responsible parties from the requirements under the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The accurate and timely reporting of waste manifest and associated information to TCEQ are the responsibility of waste generators and the Licensee. A TCEQ *Waste Generator Disposal Guide* provides steps to waste disposal for waste generators and links to required TCEQ forms (see http://www.tceq.texas.gov/permitting/radmat/licensing/generator-site-access).
Disposal charges for party state compact low-level radioactive waste shall be based on: (i) the Party State Compact Disposal Fees or Interim Party State Compact Waste Disposal Fees that are set by TCEQ or (ii) a mutually agreed upon contract between a generator and the Licensee, provided that such contract has been approved by TCEQ under 30 TAC §336.1317.

No shipment may be accepted for disposal unless it has been inspected by the executive director's Resident Inspector and advanced reporting of manifest information has been received by TCEQ.

2.0 DEFINITIONS

Cask Waste – Waste that must be shielded in order to meet shipping requirements, any waste shipped in DOT shielded cask regardless of dose rate, and any container with a dose rate greater than 1 rem/hr at the surface of the unshielded container.

Containerized Soil – Wastes composed predominantly of soil and soil-like materials shipped in smaller containers such as soft-side packaging, metal boxes, and drums, where at least 10% of the containers of each waste stream have a dose rate of less than 100 mrem/hr at a distance of 30 cm.

Containerized Debris - Debris that are shipped in smaller containers such as soft-side packaging, DOT compliant surface contaminated object (SCO) wraps, metal boxes, and drums, where at least 10% of the containers of each waste stream have a dose rate of less than 100 mrem/hr at a distance of 30 cm. This category also includes sealed sources packaged in accordance with DOT and license requirements. Containers holding a mixture of Debris and other material is managed as Debris if the mixture is comprised primarily (50% or greater) of Debris, by volume, based on visual inspection. Shielded containers are not included in this waste category.

Compact Waste - LLRW that is generated in a host state or party state or LLRW that is not generated in a host state or party state, but has been approved for importation to the state by the Texas Compact Commission.

Debris – Waste debris consisting of the following material:

- Solid material exceeding a 60 millimeter (2.4 inch) particle size that is intended for disposal and that is a manufactured object; plant or animal matter; or natural geologic material (e.g., Rubble, lead bricks and shielding, wood, concrete, metal, personal protective equipment (PPE), lab wastes, and trash), consistent with the RCRA definition that is applicable to LLMW.
- Monoliths – A mass constituting a single undifferentiated rigid unit (e.g. concrete-like unit generated from stabilization or in-situ grouting of waste, or single uniform piece of debris).
- Large items such as oversized containers, motors, components, etc. that meet the criteria for disposal within an IC NCDU.

Free liquids – Liquids that readily separate from a solid waste matrix under ambient temperature and pressure as quantitatively determined using the Paint Filter Liquids Test (PFLT), Environmental Protection Agency (EPA) Method 9095(most current version), consistent with the definition applicable to hazardous waste.

Free-standing liquids – Liquids that are present as a separate layer on the surface of a waste.

High Container Dose Rate Waste – All unshielded, containerized wastes, where 90% or more of the containers of each waste stream have a dose rate between 100 mrem/hr at a distance of 30 cm and 1 rem/hr at the surface of the container. High container dose (HCD) rate wastes will be shipped in containers such as soft-side packaging, metal boxes, drums, and high integrity containers. This waste stream does not include waste shipped in a DOT shielded cask.

Intrusive inspection – Opening waste packages or the shipping container to visually observe the waste material.

Intrusive sampling – Collection of physical samples of the incoming waste materials for laboratory analyses.

Large Component (LC) – Equipment and large items that will not fit into a Modular Concrete Canisters (MCCs); items that, for other considerations, will not be placed in an MCC; and other waste for which disposal within an MCC may not be desirable. Items that will be disposed in a debris lift of the IC NCDU, and would otherwise fall under this definition will not be considered a Large Component.

Low-Level Mixed Waste (LLMW) – Waste that is a combination of both RCRA hazardous waste and LLRW, consistent with the definition of "mixed waste" in 30 TAC 336.2.

Low-Level Radioactive Waste (LLRW) – All waste that meets the definition of "low-level radioactive waste" in 30 TAC 336.2 other than LLMW.

Modular Concrete Canister (MCC) – Cylindrical or rectangular reinforced concrete canister that when properly filled with waste and grout meets the stability requirements found in 30 TAC 336.362(b)(2) and conforms to the TCEQ regulatory requirements of retrievability.
Nationally Tracked Source - Sealed source containing a quantity equal to or greater than Category 1 or Category 2 levels of any radioactive material listed in Appendix E to Part 20 – "Nationally Tracked Source Thresholds."

Solidification by absorption – A process that involves physical absorption, where the liquid is drawn into the pores of a permeable solid, but does not include chemical binding processes. Solidification by absorption is typically termed "absorption" in the regulations and guidance applicable to low-level radioactive waste and "solidification" in the regulations and guidance applicable to hazardous waste.

Solidification by stabilization – A process that includes a chemical reaction that binds liquids to the solid matrix (i.e., it is not solely a physical process). Solidification by stabilization is typically termed "solidification" in the regulations and guidance applicable to low-level radioactive waste and "stabilization" in the regulations and guidance applicable to hazardous waste.

Stable Waste - Stable waste is waste that is inherently stable due to its form, rendered stable by placement into a high integrity container, or rendered stable by processing with an approved solidification media. Wastes designated as containerized Class A, Class B, or Class C under 30 TAC §336.362(a) and 30 TAC §336.702(5) (relating to Definitions) shall be disposed of within a reinforced concrete container and within a reinforced concrete barrier, or within containment structures made of materials technologically equivalent or superior to reinforced concrete. Exceptions may be made for Class B and C large components, on a case-by-case basis.

Waste Stream – Waste with similar physical, chemical, and radiological properties that can be adequately characterized by a single waste profile. If a single process generates wastes that may represent different waste categories due to processing variables, each separate category of waste from that process must be profiled separately as a distinct waste stream and must be segregated accordingly by the generator at the point of generation.

3.0 Limitations and Prohibited Wastes

The Licensee is authorized by this license to receive commercial low-level radioactive waste for disposal in the CWF with certain limitations and prohibitions. The limitations and prohibitions restrict certain types and quantities of wastes for the purpose of meeting performance objectives, meeting regulatory requirements, or because there has been no demonstration that a proposed waste type will meet performance objectives. Currently, this license does not allow for the disposal of certain types, forms, or waste streams of Compact waste. Successful license amendment of this license will be required to receive and dispose of certain types, forms, or waste streams of Compact waste if currently prohibited and/or not expressly permitted or licensed.

3.1 Limitations

3.1.1 Commercial low-level radioactive waste volumes and activities cannot exceed the quantities listed in LC 7.

3.1.2 Aboveground possession of Source Material and Special Nuclear Material are not to exceed the quantities listed in LC 5.

3.1.3 Complete waste pedigree (origin – last entity and location that put radioactive material into practical use, that is, use in the production or operation of something useful, tracking to final disposition, and any claimed attribution) must be documented prior to shipment - Original waste type and waste generator identified and other waste processing or management must be tracked through the final packaging for disposal. Wastes or waste streams not traceable back to the original generator or origin will be handled on a case-by-case basis by the TCEQ and Texas Compact Commission.

3.1.4 Waste may not be packaged for disposal in cardboard, fiberboard, or wood boxes.

3.1.5 Waste received over public highways must be packaged in accordance with applicable Department of Transportation (DOT) regulations.

3.2 Prohibited waste

- Waste of international origin
- Waste that contains or is commingled with Federal Facility Waste during processing
- Waste specifically prohibited from disposal in accordance with THSC Chapter 401 and Chapter 336, Radioactive Substance Rules
- Naturally-occurring radioactive material (NORM) waste
- By-product material waste (11.e(2))
- High-level radioactive waste
- Oil or petroleum products, other than incidental
- Uranium hexafluoride
- Hazardous waste
- Mixed waste

4.0 Waste Types or Streams

The Licensee is authorized by this license to receive commercial low-level radioactive waste for disposal from Texas Compact party state waste generators and Texas Compact nonparty state waste generators.

Acceptable waste generation activities include academic research, use of radionuclides in medicine, production of nuclear energy, industrial applications, and decommissioning waste from both utility and non-utility nuclear facilities. All waste and packages received for disposal in the CWF are intended for disposal and shall be received and disposed within 7 days of receipt. Waste requiring verification sampling may be stored in the waste staging building for up to 30 days while waiting sampling analytical data. If contingencies require delay of disposal of un-sampled or sampled waste, or waste packages, for greater than these 7 day and 30 day periods respectively, the Licensee shall promptly implement emergency storage consistent with LC 48 of this license and provide notice to the executive director

within 24 hours.

4.1 Sealed Sources – All sealed sources (i.e., source material deposited in a plastic medium or ANSI designed special form sources) or special form radioactive material, with the exception of check sources, disposed of in the CWF shall be doubly-packaged and encased in concrete or similar inert material within the outer package. For waste classification purposes, the activity in a waste package may be averaged over the entire package in accordance with the United States Nuclear Regulatory Commission's (U.S. NRC) current ""Concentration Averaging and Encapsulation Branch Technical Position" (BTP). In addition, the Licensee is bound by the total activity limits for specific radionuclides for a single package found within the current BTP. If a new revision of the BTP is published, the Licensee shall follow the guidance found in the new revision.

4.1.1 Encapsulation media shall be a solidified grout/concrete mix.

4.1.2 Sealed sources shall be geometrically centered within the encapsulation media. More than one source may be placed in a single container as long as the requirements of this WAC, this license, and 30 TAC Chapter 336 rules are met.

4.1.3 Reserved

4.1.4 Reserved

4.1.5 Reserved

4.1.6 Neutron sources (e.g., polonium-210, americium-241, radium-226 in combination with beryllium or other target) may only be accepted if the generator has specifically notified the Licensee and TCEQ Resident Inspectors of the intent to ship such a source. The notification shall consist of written notification prior to the initial written request for shipment. The notification shall indicate the isotope, activity, form of the source, a description of the packaging utilized, radiological data, and requested date of arrival. Additionally, a copy of the advance written notification must accompany the shipment. If the source is a nationally-tracked source, see the requirements below in Sections 4.1.7 – 4.1.8. A nationally-tracked source, as defined in 10 CFR §20.1003, refers to a sealed source containing a quantity equal to or greater than Category 1 or Category 2 levels of any radioactive material listed in Appendix E to Part 20 – "Nationally Tracked Source Thresholds."

4.1.7 Prior to shipping nationally tracked sources, the generator shall provide the Licensee and the TCEQ the following information specifically identifying these sources for review and approval.

4.1.7.1 Generator's name, shipping address, radioactive material License number, and name of individual preparing the reported information.

4.1.7.2 The manufacturer, model, and serial number of the source or, if not available, other information to uniquely identify the source.

4.1.7.3 The radioactive material in the source and current activity in becquerels and curies. The activity reported must be the same as the activity that will be listed on the shipment manifest.

4.1. 7.4 The date the source strength is reported.

4.1. 7.5 The requested shipping date and estimated arrival date.

4.1. 7.6 The waste manifest number and the waste disposal container number.

4.1.8 Within 24 hours upon waste source receipt and disposal, the Licensee will complete U.S. NRC Form 748, National Source Tracking Transaction Report. The form may be submitted electronically and is located at: http://www.nrc.gov/security/byproduct/ismp/nsts/report-nsts/nrc748a-report-source.pdf

4.2 Biological/Pathogenic Wastes – Waste containing biological, pathogenic, or infectious material shall be treated by the generator or processor to reduce to the maximum extent practicable the potential hazard from the non-radiological materials.

4.2.1 Incinerated biological waste shall be solidified or treated in such a manner as to be rendered non-dispersible in air, exclusive of packaging. See Section 9.0 for details on limits of attribution from treating and processing waste.

4.2.2 Biological waste not undergoing incineration has specific packaging requirements and will be considered "biological waste" upon acceptance at the disposal facility site.

4.2.3 For the standard over-pack method for treating biological waste using absorbent and lime, standard over-packs may be used as the outer container.

4.2.3.1 Waste containing hazardous, biological, pathogenic, or Infectious material must be packaged to reduce to the maximum extent practicable the potential hazard from the non-radiological materials. In addition, waste containing biological, pathogenic, or infectious material that is not incinerated shall be doubly packaged in drums composed of steel, polyethylene, or equivalent material as follows:

- The inner container with the capacity of 55-gallon or less, shall have a water-tight liner at least four (4) mils thick and be hermetically sealed after filling.
- The biological material shall be thoroughly layered in the inner container in a ratio of 30 parts biological material to at least one (1) part slaked lime and ten (10) parts absorbent, which shall be agricultural grade four (4) vermiculite or medium grade diatomaceous earth, or other absorbents that have received approval by the executive director by volume. The addition of formaldehyde is prohibited.
- The closure on the inner container shall be a standard lid with securely attached ring and bolt. Lever locks are prohibited.

- Unless otherwise authorized by the executive director, the outer container or over-pack, which must have a volume of at least one and one-half (1.5) times the inner container, must be filled initially with at least four inches (4") of absorbent material, the inner container placed in an upright position, and the remaining volume filled with the absorbent material, then securely closed and properly sealed.

4.3 Source Material and Special Nuclear Material –This license, by LC 5.E and LC 5.F, authorizes receipt of source material and special nuclear material in the following quantities and with limitations:

4.3.1 Source Material – Above-ground possession of source material not to exceed 30,000,000 grams.

4.3.2 Special Nuclear Material – Above-ground possession of waste that contains special nuclear material (SNM), as defined in 30 TAC §336.2, is limited to quantities not sufficient to form a critical mass as provided in LC 5.F. For each kind of SNM, determine the ratio between the quantity of that SNM and the quantity specified above for the same kind of SNM. The sum of such ratios for all of the kinds of SNM in combination may not exceed one (1). Upon receipt and acceptance by the Licensee and the TCEQ, SNM falls under the possession limitations of this license.

4.4 Hazardous Waste – No mixtures of radioactive waste and hazardous waste as defined by Title 40 Code of Federal Regulations (CFR) Part 261 and TCEQ rules 30 TAC Chapter 351 will be accepted at the CWF.

4.4.1 Waste containing hazardous listed chemicals or that exhibits hazardous characteristics, as received, is prohibited from acceptance and disposal at the CWF. A mixture of radioactive waste and waste which was formerly classified a hazardous solely because it exhibited one or more of the hazardous characteristics defined in 40 CFR Part 261, Subpart C, but has been treated in manner such that it no longer exhibits any of the characteristics, will be reviewed for acceptance prior to shipment by the licensee. As required by 40 CFR §261.24, the Toxicity Characteristic Leaching Procedure shall be used.

4.5 Lead - Only lead used for radiation shielding purposes may be acceptable for disposal in the CWF. Requests for disposal of non-contaminated lead used for shielding purposes must be evaluated by the Licensee prior to request for shipment to the CWF. Generators shall provide the following information for shipments containing lead:

- Type of lead used (sheet, block, pig, etc.)
- Amount of lead used (in pounds) and a depiction of its location and configuration within the package
- Container type and size
- Description of the waste requiring shielding including waste classification
- Approximate external dose rate prior to shielding
- External dose rate after shielding

5.0 Waste Generator Audit/Certification

Condition 94 of this license requires operator procedures to address verification of waste packages shipped to the CWF. The Licensee has submitted a plan for implementation of the Quality Assurance (QA) Generator Certification Program for generators planning to ship waste to the CWF for disposal. The generator for-Licensee certification purposes is the individual or company that is listed as the generator on the waste profile submitted to the Licensee. The operator generator certification packet is described in the Licensee's Waste Acceptance Plan (WAP).

6.0 Waste Classification

All waste classification shall be conducted by the generator in accordance with the waste classification tables in 30 TAC §336.362, Appendix E. Waste class verification shall be performed by the Licensee through the approved WAP and generator audit/waste approval process both prior to shipping and upon receipt. Waste class verification may also be performed by the TCEQ prior to acceptance. The classes of waste authorized for disposal at the CWF are Class A, B, C and Containerized Class A low-level radioactive waste. Containerized Class A is "Class A low-level radioactive waste which presents a hazard because of high radiation levels. High radiation levels are radiation levels from an unshielded container that could result in an individual receiving a dose equivalent in excess of 0.1 rem (1 millisievert) in one hour at 30 centimeters from any surface of the container that the radiation penetrates."

Discrete items, as defined in the current BTP, which are encapsulated, grouted, and classified by concentration averaging in accordance with the current BTP, are acceptable for disposal.

Wastes that are solidified (mixed with non-radioactive binding agents) to create a physically and radiologically uniform waste form may not be classified in accordance with the current BTP, but must be classified based on their radionuclide concentrations prior to the addition of non-radioactive material.

Additional documentation will be required by TCEQ from the generator on waste classification. See Section 7.0 below.

7.0 Waste Characterization

Waste characteristics shall be identified by the generators and verified by the Licensee through the approved WAP and the generator audit/waste approval process. Waste generators seeking authorization to ship waste to the CWF shall follow the generator certification process provided in the Licensee's approved WAP. Waste characterization verification may also be performed by the TCEQ. Minimum waste characteristic requirements shall be consistent with 30 TAC §336.362(b)(1) and this license, including but not limited to:

7.1 Liquid waste shall be solidified or packaged in sufficient absorbent material to absorb twice the volume of the liquid (See also Section 9).

7.2 Solid waste containing liquid shall contain as little free-standing and noncorrosive liquid as is reasonably achievable, but in no case shall the liquid exceed 1.0% of the volume. This shall be accomplished by de-watering or by using approved solidification agents.

7.3 Waste shall not be readily capable of detonation or of explosive decomposition or reaction at normal pressures and temperatures or of explosive reaction with water.

7.4 Waste shall not contain, or be capable of generating, quantities of toxic gases, vapors, or fumes harmful to persons transporting, handling, or disposing of the waste. This does not apply to radioactive gaseous waste packaged in accordance with requirement below.

7.5 Waste must not be pyrophoric. Pyrophoric materials contained in waste shall be treated, prepared, and packaged to be nonflammable.

7.6 Waste in a gaseous form shall be packaged at an absolute pressure that does not exceed 1.5 atmospheres at 20 degrees Celsius. Total activity shall not exceed 100 curies (3.7 terabecquerels) per container.

7.7 The maximum weight percent of chelating agents is eight percent (8%) for all waste streams. Chelating agents shall be made immobile to the maximum extent possible, to minimize intrusion into the surrounding environment and migration into unaffected areas.

7.8 If waste received is not properly characterized, classified, or packaged by the generator it will not be accepted for disposal at the CWF. Upon inspection by the Licensee and the TCEQ and discovery of the non-compliance, the Licensee shall immediately notify the generator to correct any discrepancies. The TCEQ shall be notified within 24 hours of any non-compliant waste shipment.

7.9 The Licensee may not open any package or shipping container except for the following purposes:

7.9.1 Inspecting to ensure compliance with this license and/or confirming package contents.

7.9.2 Repairing or repackaging damaged containers.

7.9.3 Returning outer shielding or shipping containers.

7.9.4 Waste shipment verification will be conducted according to the following table; however, the following list of wastes will be identified during the waste profile review (see WAP Section 5.2) and will be excluded from intrusive sampling or inspection due to health and safety concerns:

- Containers with wastes that could release radon or tritium gas upon opening
- Containers with wastes that could release fine, dispersible radioactive particulates (e.g., ash) upon opening
- Containers with biohazard wastes
- Containers with sharps from any source (including sharps that are not biohazard waste)
- Any other containerized waste as authorized by the TCEQ for this purpose.

7.9.5 Waste Shipment verification will be conducted according to the following table.

	Bulk Soil	Bulk Debris	Containerized Soil	Containerized Debris	High Dose Rate	Cask Waste
Pre-shipment Sample	Required	See Note 1	Required	See note 2	See note 3	See note 3
Intrusive Visual Inspection	100%	100%	10% of containers from each profiled waste stream per shipment	10% of containers from each profiled waste stream per shipment	See note 3	See note 3
Intrusive Sampling/ Analysis	For each profiled waste stream: The first 10 shipments, and 10% thereafter	See Note 1	10% of containers from each profiled waste stream per shipment	See note 2	See note 3	See note 3
External Radiologic Analysis	N/A	10%	See note 1	10% of containers from each profiled waste stream per shipment	10% of containers from each profiled waste stream per shipment	100%

Note 1: External radiologic analysis may be performed in lieu of direct sample analysis if appropriate
Note 2: Sampling and analysis not performed due to physical nature of the waste
Note 3: Intrusive inspection and sampling deferred due to ALARA considerations

8.0 Waste Tracking

Waste tracking from generation or point of origin to disposal ensures control and consistency in maintaining the pedigree of the waste and for the purposes of accurate waste classification. The CWF inventory must be tracked closely by the Licensee. Waste inventory will be incorporated into the Performance Assessment Maintenance Plan (PAMP) and evaluated to ensure that the performance objectives will continue to be met during land disposal facility operations. The Licensee must maintain records for each shipment of waste disposed of at the land disposal facility. The records must conform to the requirement of 30 TAC §336.740(a). All records and reports required by the license, rules, or orders must be complete and accurate.

Every waste shipment that is eligible for acceptance and transfer of title to the State of Texas will require additional documentation to be completed by the waste generator and submitted to TCEQ for verification and tracking purposes. A TCEQ *Waste Generator Disposal Guide* provides steps to waste disposal for waste generators and links to required TCEQ forms (see http://www.tceq.texas.gov/permitting/radmat/licensing/generator-site-access). Each generator or

generator's agent is required to use TCEQ Form 20225, *Texas Compact Waste Shipment Verification* which can be found on TCEQ's external web page by clicking on the "Forms" link located on the left portion of the page. The form must be completed and submitted via electronic mail to RADMAT@TCEQ.texas.gov or by facsimile at 512-239-6464 prior to any planned waste shipment to the CWF. Generators must also submit the waste manifest for each shipment by attaching it to the Waste Shipment Verification Form.

9.0 Treatment, Stabilization, and Waste Minimization

Treatment and processing for the purposes of stabilization and waste minimization are acceptable for waste disposed at the CWF. Treatment and processing for the purposes of dilution or changing waste classification are prohibited in accordance with 30 TAC §336.229. Acceptable forms of treatment for stabilization and waste minimization include, but are not limited to:

- Compaction and super-compaction;
- Encapsulation;
- Incineration for Dry Active Waste (DAW) and preferred for biological waste; and
- De-watering
  Note: Any package that has undergone de-watering to meet free liquid requirements will be considered acceptable for disposal as long as the generator provides a certification that the package contains less than 1% free liquids at the time of shipment.
- Solidification
  Note: Absorbents must be non-biodegradable. The definition of non-biodegradable can be found in 40 CFR Part 261.314(d).
- Sorting and segregation; and
- Rendering biological, pathogenic, or infectious waste void of the non-radiological hazard.

The generator or processor must demonstrate that any waste that is treated or processed shall restrict commingling of waste with nonparty Compact sources consistent with the requirements set forth in 30 TAC §336.745(e). If a generator sends a waste stream to a processor, either the generator or processor has to demonstrate that the processed waste meets the requirements of 30 TAC §336.745(g) for total radioactivity contribution from previous nonparty Compact waste or differently defined waste types, including Naturally-Occurring Radioactive Material (NORM), remaining in the process or treatment equipment.

10.0 Waste Form and Packaging Requirements

This section provides preparatory measures for waste generators, waste brokers, and shipment transporters to facilitate waste acceptance by the State of Texas. Waste form, packaging requirements and surface contamination limits are intended to be met not only at the point of waste origin during preparation and packing of the disposal container, but also at the point of waste acceptance for disposal. This section on waste form and packaging provides waste generators, the Licensee, and the State of Texas assurance that shipment rejection, repackaging, and decontamination of packages and vehicles can be avoided, except under infrequent circumstances. A TCEQ *Waste Generator Disposal Guide* provides steps to waste disposal for waste generators and links to required TCEQ forms (see http://www.tceq.texas.gov/permitting/radmat/licensing/generator-site-access)

Low-level radioactive waste must be packaged in such a manner that waste containers received at the

land disposal facility are not deformed to the extent that, there is a loss or dispersal of contents, there is an increase in the external radiation levels as recorded on the manifest (within instrument tolerances), or there is degradation due to chemical, physical or radiological reaction which could result in a loss of container integrity. Where the license conditions for the disposal site are more restrictive than the provisions of §336.362(b)(1), the license shall govern.

10.1 All Containerized Class A, Class B and Class C waste placed in the CWF Containerized Disposal Unit (CDU) shall be placed in reinforced concrete canisters at the point of emplacement – the Licensee's modular concrete canisters (MCCs). Large components or packages that are too large to fit into a MCC will be evaluated by the TCEQ on a case-by-case for canister equivalency determination (See section 10.3 below). Additionally, components or packages that would fit into a standard MCC but placed in a smaller equivalent MCC will be evaluated case-by-case for canister equivalency determination by the TCEQ.

10.2 Modular Concrete Canisters (MCC's)

10.2.1 MCCs are intended to accommodate a variety of standard industry disposal packages (55-gallon drum, 85-gallon drum, HIC, B-25 metal box) in certain configurations. Disposal packages must be emplaced in approved MCCs approved by TCEQ prior to use.

10.3 Large Components

10.3.1 Large components not placed in MCCs shall meet waste form and stability requirements consistent with 30 TAC §336.362(b)(2)(A) and 30 TAC §336.730(b) at the time of disposal.

10.3.2 A 90-day pre-notification plan shall be submitted to the TCEQ for all large components and items of MCC non-conformance that require special handling or emplacement in order to allow for engineering and ALARA reviews. The plan shall include, but not be limited to the following:

- Waste Profile for each LC or LC project
- Drawings, photographs, and dimension specifications;
- Description of voids and how they will be filled;
- Packaging configuration and how it meets stability requirements;
- Transportation Plan meeting DSHS and DOT regulations;
- Lift Plan
- Disposal Placement Plan
- Radiological characterization and surveys; and
- ALARA Plan

10.4 Waste Package/Container Lifting Devices

All disposal packages (boxes, liners or HICs) shall have appropriate lifting devices to facilitate ease of handling and for ALARA purposes. All drums with a gross weight over 1000 pounds each must be palletized and banded unless alternate arrangements are made with the licensee.

10.5 Contamination Limits for Packages, Vehicles, and Shipping Containers

Surface contamination of disposal packages shall be reduced to the maximum extent practicable. Reasonable means, considering ALARA, shall be used to minimize surface contamination on packages and transport vehicles during preparation of waste for shipment. Contamination limits for the package, the barrier and the vehicle shall comply with 49 CFR §173.428, 49 CFR §173.443(c), and 25 TAC §289.257.

10.6 Void Spaces In Waste Packages

Void spaces within the waste and between the waste and its package must be reduced to the extent practicable in accordance with 30 TAC §336.362(b)(2)(C). Void spaces between the modular concrete containers must be reduced to the maximum extent practicable. With the exception of packages shipped in the TN-RAM Type B Cask, voids within the package shall be reduced to maximum extent practicable and can have no more than 15% void space or head space for disposal in the CWF unless approved prior to shipment. Other exceptions to these requirements may be requested and will be evaluated by the licensee and TCEQ on a case-by-case basis.

Resins can only be disposed in HICs, liners, or other approved packages.

11.0 Container Weight

In determining the amount of disposal charges and surcharges, the shipping container weight on the manifest will be subtracted from the package weight to obtain the true waste container weight. There are potential surcharges for waste containers weighing greater than 10,000 lbs..

12.0 Transportation

Each shipment of low-level radioactive waste destined for the CWF shall meet all applicable regulatory requirements for transportation in DSHS regulations (25 TAC §289.257) U.S. DOT regulations (49 CFR Parts 171-180), U.S. NRC regulations, United States Environmental Protection Agency (U.S. EPA), and the requirements of this license. All waste shippers and transporters wishing to transport low-level radioactive waste to the CWF will be required to submit a fee, emergency plans, quality assurance programs for packaging, and proof of financial responsibility to DSHS, Radiation Safety Licensing Branch for approval prior to shipment of waste. The DSHS has developed guidance in assisting transporters that describes the process for submission of documentation as well as fee payment entitled *Regulatory Guide 2.19 – Guide for Submission of Documents and Fees by Low-Level Radioactive Waste Shippers and Transporters* (see http://www.dshs.state.tx.us/radiation/regguide.shtm).

All low-level radioactive waste intended for disposal at the CWF shall be manifested in accordance with

this WAC and TCEQ requirements, 30 TAC §336.363, 25 TAC §289.257(d)(d), 10 CFR §61.80, 10 CFR §20.2006, and all applicable U.S. DOT regulations. The manifest should reflect information requested on NRC forms 540, 540A, 541, 541A, 542, and 542A. The Licensee must maintain all records and shipment manifests pertinent to the transportation, receipt, and disposal of low level radioactive waste of each shipment, including waste profiles, waste manifests, and any additional waste shipment information, until authorization is given by TCEQ for transfer or disposal of such records. In addition to meeting transportation requirements under both DSHS regulations and DOT regulations all waste shipments sent to the CWF shall meet requirements listed below in Section 12.1 – Section 12.11 of the WAC. Exceptions to the following requirements may be requested and will be evaluated by TCEQ on a case-by-case basis.

12.1 Waste must be shipped in packages or containment structures that will prevent releases during transit and minimize impacts from accidents.

12.2 Waste must be packaged in such a manner that the waste will not be exposed to the environment anytime during transit.

12.3 Waste must be packaged in such a manner as to prevent water, including rain, ice, or snow, from contacting the waste during transit.

12.4 Five (5) days advanced notification is required for every requested waste shipment. A waste manifest must be included with advanced notification to WCS and TCEQ. Advanced reporting of manifest and related information to TCEQ will be in a manner prescribed to facilitate tracking of waste shipments by the State of Texas.

12.5 Approval for waste shipments, including day and time for scheduled arrival, will be provided by the Licensee. Waste shipments should not be put in transit until and unless approval has been received and TCEQ has been notified.

12.6 The Licensee shall notify the shipper/generator, TCEQ, and DSHS when any shipment of radioactive waste has not arrived within 24 hours after the scheduled delivery time of the waste shipment.

12.7 The Licensee shall acknowledge receipt of the waste within seven (7) days of its acceptance for disposal by returning a signed copy of the shipping manifest to the shipper. Any discrepancies from the shipping manifest will be listed on the returned manifest.

12.8 Once a shipment enters the licensed facility, the waste shipment shall be temporarily staged, if applicable and authorized, in a secured area directly under the control of the Licensee.

12.9 Van Shipments

Shipments arriving at the CWF must be properly blocked, braced, and/or secured.

12.9.1 Notification must be made to the Licensee for drums exceeding 1,000 pounds at the time of scheduling.

12.10 Flatbed Trailer Shipments

12.10.1 Shipments arriving at the CWF must be properly blocked, braced, and/or secured.

12.11 Shielding Cask Shipments

12.11.1 Cask documents (Certificates of Compliance, handling and maintenance procedures, and drawings) shall be made available to WCS prior to shipment of the cask to the CWF.

12.11.2 All shipments shall strictly comply with the applicable Certificate of Compliance and/or the cask handling procedures for the cask in use (torque requirements, sealing gaskets, weight restriction, shoring requirements, etc.)

12.11.3 Customers using an U.S. NRC licensed cask not owned by the Licensee shall ensure that the Licensee is a "Registered User" of the licensed cask prior to shipment to the CWF. This applies to all shipments requiring licensed packages.

12.12 Shipping Container Damage

12.12.1 If a shipping container is dented, damaged or defective when received, the Licensee shall, if necessary, repair or repackage the shipping container and shall contact the generator to get direction on required remedial action. Rejected shipping containers must comply with U.S. DOT and DSHS transportation regulations prior to release from the CWF.

13.0 TCEQ Resident Inspector

The TCEQ Resident Inspector may inspect every waste shipment and manifest received at the CWF for proper classification and characterization prior to waste acceptance. Acceptance occurs when all waste acceptance criteria specified in this license have been satisfied as determined by the TCEQ. The waste acceptance determination of the TCEQ shall be final. For waste intended for disposal at the Compact Waste Disposal Facility, waste acceptance is triggered by the final approval of the specific waste shipment by the executive director's Resident Inspector or other qualified TCEQ staff. Texas will take title for all low-level radioactive waste upon final approval by TCEQ and acceptance for disposal into the CWF.

The Licensee shall notify the TCEQ within 24 hours of any shipments that do not comply with applicable law or this license. As part of the TCEQ inspection process, the TCEQ reserves the right to inspect manifests, waste shipments, and conduct visual inspections and external exposure rate surveys, as well as any other inspection and analysis deemed necessary by the TCEQ. Waste shipment packaging may be inspected for damage or compromised container integrity by the TCEQ. The Licensee must notify the generator/shipper and the TCEQ when it has been determined that a low-level radioactive waste shipment or part of a shipment cannot be accepted for disposal and the shipment has been returned to an authorized facility. The Licensee must notify the waste generator/shipper, TCEQ, and DSHS before the end of the next business day if a shipment has failed to arrive at the land disposal facility within the 24-hour time frame indicated in the advance notification or manifest. As deemed necessary, the Licensee may properly process and package any non-compliant waste shipment for disposal. Waste shall not be

returned to the generator without prior notification to the generator.

14.0 References

All generators shipping low-level radioactive waste to the CWF shall comply with the following applicable documents:

14.1 Title 25 Texas Administrative Code, Chapter 289, *Radiation Control,* effective November 1996.

14.2 Title 30 Texas Administrative Code, Chapter 336, *Radioactive Substance Rules*, effective September 1998.

14.3 Texas Health and Safety Code, Chapter 401, *Radioactive Materials and Other Sources of Radiation*, enacted 1989.

14.4 U.S. Nuclear Regulatory Commission, *Final Branch Technical Position on Concentration Averaging and Encapsulation*, Revision in Part to Waste Classification Technical Position, January 17, 1995.

14.5 U.S. Nuclear Regulatory Commission, *Technical Position Paper on Waste Form,* 1983.

14.6 Waste Control Specialists LLC, *Application for Administrative Amendment to Radioactive Material License No. R04100 to Authorize Use of New and Revised Procedures*, October 2011.

14.7 Texas Commission on Environmental Quality, *Texas Compact Waste Shipment Verification Form,* March 2011.

14.8 U.S. Department of Transportation, Title 49 Code of Federal Regulations, *Transportation,* Parts 171-180

14.9 U.S. Nuclear Regulatory Commission, Title 10 Code of Federal Regulations, Part 20, *Standards for Protection Against Radiation.*

14.10 U.S. Nuclear Regulatory Commission, Title 10 Code of Federal Regulations, Part 61, *Licensing Requirements for Land Disposal of Radioactive Waste.*

14.11 Waste Control Specialists LLC, *Application for License to Authorize Near-Surface Land Disposal of Low-Level Radioactive Waste,* August 2004.

14.12 Radioactive Material License No. R04100, issued September 2009, and subsequent amendments.

14.13 Additional Security Measures (ASM) on the Transportation of Radioactive Material Quantities of Concern issued by the U.S. Nuclear Regulatory Commission (EA-05-007), July 2005 and associated updates.

14.14 Texas Department of State Health Services, *Regulatory Guide 2.19 – Guide for Submission of Documents and Fees by Low-Level Radioactive Waste Shippers and Transporters.*

15.0 Site Contact Information

Address: Waste Control Specialists LLC9998

W. State Hwy 176Andrews, TX 79714

Phone Numbers:

Customer Service: (432)-525-8500

Toll Free: (888)-789-2783

16.0 TCEQ Contact Information

Address: 12015 Park 35 Circle

Austin, TX 78753MC-233

Phone Number: Radioactive Materials Division: (512)-239-6466

Electronic Mail: RADMAT@tceq.texas.gov

Attachment D
Requirements Pertain to the Pavement Design

1. The calculation of the equivalent 18,000 pound (18-kip) single axle load is incorrect in the design. For example, the design calculation for the access road at the entrance shows that each application of a HS 20-44 vehicle would result in an 18-kip equivalency factor of 0.61. This is inconsistent with common engineering practice. A HS 20-44 design vehicle has 1 single axle of 8-kip and 2 tandem axles of 32-kip each. Furthermore, the 18-kip traffic equivalency factors for the aforementioned single and tandem axles are 0.036 and 0.843, individually using 1993 AASHTO guide. As a result, the 18-kip equivalency factor of one (1) application of a HS 20-44 truck is equal to 1.72 (= 1 x 0.036 + 2 x 0.843). The existing thickness design underestimates damages caused by HS 20-44 trucks. Therefore, the Licensee shall verify the design thickness and re-design if necessary.
2. The Licensee shall verify that the design is appropriate for the daily traffic (i.e. the anticipated daily applications of HS 20-44 trucks).
3. The Licensee shall verify the design section of asphalt concrete pavement (i.e., four (4) inches asphalt concrete plus 12 inches crushed stone base course) using the 1993 AASHTO guide for design of pavement structures. The submitted calculations show that an older AASHTO Interim Guide (1972) was used in the design.
4. The Licensee shall provide calculations for the thickness design of gravel roads. The design thickness is based on an assumed design input (i.e., a structure number). The design procedures of aggregated-surfaced roads are covered in the 1993 AASHTO guide. It is recommended to use the section of low-volume road design to confirm that the proposed thickness (i.e., 12 inches crushed stone) of gravel road is properly designed.
5. Regarding specification 31 80 00 (page 4), no requirements of sodium sulfate soundness loss, flat and elongated particles, and Los Angeles abrasion etc. are specified. Aggregates of suitable angularities and durability must be used in the base course. The Licensee shall provide these requirements in the specification.
6. Regarding specification 32 12 00 (page 2), the Licensee shall take a minimum of three (3) samples for acceptance tests of density and thickness.
7. Regarding specification 32 12 00 (page 6), it is unclear to state that “don’t overheat the material or cause thermal damage.” The Licensee shall specify the temperature limits of hot asphalt mix (HMA) directly in the specification.
8. Regarding specification 32 12 00 (page 8), the maximum lift thickness of HMA for compaction is not specified. The Licensee shall provide a maximum of four (4) inch lift thickness in the specification, if the revised design thickness of asphalt concrete is over four (4) inches.
9. For the common site layout (drawing #C0.01), the roadway width shown is inconsistent with the width indicated on the typical section (drawing #C0.06). The Licensee shall revise the typical section.
10. For the Compact Waste Disposal Facility site layout (drawing #C1.01), the roadway width shown is inconsistent with the width indicated on the typical section (drawing #C1.02).The Licensee shall revise the typical section.

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