

The Texas Commission on Environmental Quality (TCEQ, agency or commission) adopts amendments to §§336.1, 336.5, 336.105, 336.201, 336.203, 336.207, 336.211, 336.213, 336.601, 336.613, and 336.619.

The commission also adopts new §§336.1101, 336.1103, 336.1105, 336.1107, 336.1109, 336.1111, 336.1113, 336.1115, 336.1117, 336.1119, 336.1121, 336.1123, 336.1125, 336.1127, 336.1129, 336.1131, 336.1133, 336.1135, 336.1201, 336.1203, 336.1205, 336.1207, 336.1209, 336.1211, 336.1213, 336.1215, 336.1217, 336.1219, 336.1221, 336.1223, 336.1225, 336.1227, 336.1229, 336.1231, 336.1233, 336.1235 and the repeal of §336.11.

Sections 336.1, 336.105, 336.211, 336.213, 336.601, 336.619, 336.1101, 336.1103, 336.1105, 336.1107, 336.1111, 336.1113, 336.1115, 336.1117, 336.1121, 336.1125, 336.1129, 336.1135, 336.1213, and 336.1235 are adopted *with changes* to the text and will be republished. Sections 336.5, 336.201, 336.203, 336.207, 336.613, 336.1109, 336.1119, 336.1123, 336.1127, 336.1131, 336.1133, 336.1201, 336.1203, 336.1205, 336.1207, 336.1209, 336.1211, 336.1215, 336.1217, 336.1219, 336.1221, 336.1223, 336.1225, 336.1227, 336.1229, 336.1231, 336.1233, and the repeal of 336.11 are adopted *without changes* to the proposed text as published in the September 7, 2007, issue of the *Texas Register* (32 TexReg 6066) and will not be republished.

#### BACKGROUND AND SUMMARY OF THE FACTUAL BASIS FOR THE ADOPTED RULES

The purpose of this rulemaking is to implement Senate Bill (SB) 1604, 80th Legislature, 2007, and its amendments to Texas Health and Safety Code (THSC), Chapter 401 (also known as the Texas Radiation Control Act (TRCA)). The bill transfers responsibilities for the regulation and licensing of source material recovery, by-product disposal, and commercial radioactive substances storage and processing from the Texas Department of State Health Services (department) to the commission. This rulemaking intends to

transfer the technical requirements for these programs from the department's rules in 25 TAC §289.254 and §289.260 into new subchapters of the commission's radioactive substance rules in Chapter 336.

While the technical requirements remain the same, these new commission programs will be integrated into and administered under the commission's existing radioactive material program requirements for application processing, public notice, public participation, licensing fees, and enforcement.

SB 1604 also establishes a new state fee for disposal of radioactive substances and amends underground injection control requirements for uranium mining. The commission intends to address the new state fee and underground injection control requirements in separate rulemakings. In light of comments received on this rulemaking, the commission has also decided to address specific financial assurance requirements in future rulemaking.

A corresponding rulemaking is published in this issue of the *Texas Register* and includes changes to 30 TAC Chapter 39, Public Notice; and Chapter 281, Applications Processing.

#### SECTION BY SECTION DISCUSSION

The commission adopts administrative changes throughout these sections to be consistent with *Texas Register* requirements and other agency rules and guidelines and to conform to the drafting standards in the *Texas Legislative Council Drafting Manual*, August 2006.

#### *SUBCHAPTER A: GENERAL PROVISIONS.*

*§336.1. Scope and General Provisions.*

The commission adopts amendments to §336.1(a) to reflect the new commission responsibilities under SB 1604 for the regulation and licensing of source material recovery, by-product disposal, and the commercial storage and processing of radioactive substances. In response to comment, §336.1(a) was modified to remove the term “mine.”

The commission adopts amendments to §336.1(f)(5) - (7) to prohibit source material recovery, by-product disposal, and the commercial storage and processing of radioactive substances unless the person is licensed or exempted by the commission.

*§336.5. Exemptions.*

The commission adopts amendments to §336.5(c) to reflect amendments to THSC, §401.106(a) under SB 1604 to provide the commission authority to exempt by rule a source of radiation or a kind of use or user from the licensing or registration requirements provided by Chapter 401 if the commission finds that the exemption of the source of radiation or kind of use or user will not constitute a significant risk to the public health and safety and the environment. Prior to SB 1604, only the department had authority to exempt a source of radiation or a kind of use or user from licensing requirements provided by Chapter 401.

The commission adopts amendments to §336.5(d) to recognize any of the department’s exemptions that were issued prior to the effective date of SB 1604. The commission may modify the exemptions from the statutory requirements in future rulemaking according to the requirements of THSC, §401.106(a). The commission also retains the process for exempting a source of radiation or a kind of use or user from the application of a rule in Chapter 336 under §336.5(a).

*§336.11. Memorandum of Understanding With the Texas Department of Health Regarding Radiation Control Functions.*

The commission adopts the repeal of §336.11. Because of the changes in jurisdictional responsibilities established in SB 1604, the provisions of the Memorandum of Understanding (MOU) between the department and the commission regarding radiation control functions no longer reflect current law. The commission intends to work with the department to revise the MOU and propose it in a future rulemaking.

*SUBCHAPTER B: RADIOACTIVE SUBSTANCE FEES.*

*§336.105. Schedule of Fees for Other Licenses.*

The commission adopts amendments to §336.105(a) to reflect application fees for the regulation and licensing of source material recovery, by-product disposal, and the commercial storage and processing of radioactive substances. Licenses for source material recovery and by-product disposal will be subject to the requirements of new Subchapter L. Licenses for commercial radioactive substances processing and storage will be subject to the requirements of new Subchapter M.

The commission adopts amendments to §336.105(a)(4), to set application fees of \$463,096 for conventional mining, \$322,633 for in situ mining, \$325,910 for heap leach, and \$374,729 for disposal only for license applications received under Subchapter L for source material recovery and by-product disposal.

The commission adopts amendments to §336.105(a)(5), to set application fees of \$3,830 for Waste Processing - Class I Exempt; \$39,959 for Waste Processing - Class I; \$94,661 for Waste Processing - Class II; and \$273,800 for Waste Processing - Class III for license applications received under Subchapter M for commercial radioactive substances storage and processing.

The commission adopts amendments to §336.105(b) to reflect annual license fees for the regulation and licensing of source material recovery, by-product disposal, and the commercial storage and processing of radioactive substances.

The commission adopts amendments to §336.105(b)(4) - (5), to set an annual licensing fee of \$60,929.50 for facilities regulated under Subchapter L that are operational or are in closure.

The commission adopts amendments to §336.105(b)(6) to set annual licensing fees for facilities regulated under Subchapter L that are in post-closure. The fees are set as \$52,011.50 for conventional mining; \$26,006 for in situ mining; and \$52,011.50 for disposal only.

The commission adopts amendments to §336.105(b)(7) - (9) to set additional multipliers and one-time fees related to licenses issued under Subchapter L for source material recovery and by-product disposal.

The commission adopts amendments to §336.105(b)(10) to set annual licensing fees for facilities regulated under Subchapter M. These fees are the same as the application fees for facilities regulated under Subchapter M in §336.105(a)(5).

The commission adopts amendments to §336.105(f) to reflect that under the provisions of SB 1604, the commission may assess and collect additional fees from the applicant to recover costs for an application to dispose of by-product material that was filed with the department on or before January 1, 2007. The commission recognizes that existing licensees were subject to a biennial licensing fee at the department. While the commission intends to establish a schedule for the payment of an annual licensing fee for both new and existing licensees, the commission does not expect a licensee to pay twice for coverage of the same year.

The commission adopts amendments to §336.105(g) to allow licensees which remitted a biennial fee to the department to remit the annual fee to the commission upon the expiration of the second year of coverage of the biennial fee.

*SUBCHAPTER C: GENERAL LICENSING REQUIREMENTS.*

The commission adopts amendments to the title of Subchapter C by changing the name from "General Disposal Requirements" to "General Licensing Requirements." Prior to SB 1604, the commission had responsibilities under the TRCA only for certain disposal activities. SB 1604 provides the TCEQ with additional regulatory and licensing responsibilities for source material recovery and commercial radioactive substances storage and processing. Subchapter C contains general provisions applicable to all licensing programs.

*§336.201. Purpose and Scope.*

The commission adopts amendments to §336.201 to reflect the statutory changes in SB 1604 that provide the commission authority to regulate the disposal of by-product material.

*§336.203. License Required.*

The commission adopts amendments to §336.203 to reflect the statutory changes in SB 1604 that provide the commission authority to establish exemptions under THSC, §401.106(a).

*§336.207. General Requirements for Issuance of a License.*

The commission adopts amendments to §336.207(1) to remove the word "disposal" to reflect that the commission regulates radioactive material activities in addition to disposal.

The commission adopts amendments to §336.207(4) to specify that the paragraph only applies to applications for a license under Subchapter H of Chapter 336 for commercial disposal of low-level radioactive waste.

*§336.211. General Requirements for Radioactive Material Disposal.*

The commission adopts amendments to §336.211(a)(1) to reflect that a licensee may dispose of licensed material at a facility licensed under Subchapter L for the disposal of by-product material.

The commission adopts amendments to §336.211(c) to reflect the change in regulatory responsibilities in SB 1604 for the commission's regulation and licensing of commercial radioactive substances processing and storage.

The commission adopts amendments to §336.211(d) to provide that the receipt, storage and/or processing at a licensed disposal facility for the explicit purpose of disposal must be regulated in accordance with the license authorizing disposal.

*§336.213. Method of Obtaining Approval of Proposed Activities.*

The commission adopts amendments to the title of this section by removing the words "disposal procedures" and replacing them with the word "activities" to reflect that the commission's licensing authority under Chapter 336 includes activities in addition to disposal.

The commission adopts amendments to §336.213(a) to provide that persons who intend to store or process radioactive substances from other persons or recover or process source material shall submit an application according to Chapter 305, Consolidated Permits. In response to comments, §336.213(a) was modified to remove a proposed reference to mining.

*SUBCHAPTER G: DECOMMISSIONING STANDARDS.*

The commission adopts amendments to Subchapter G to establish decommissioning standards for radioactive substances storage and processing facilities licensed under new Subchapter M, Licensing of Radioactive Substances Processing and Storage Facilities. Decommissioning requirements of storage and processing facilities will be required under Subchapter G in addition to the requirements of Subchapter M. Financial assurance for decommissioning of storage and processing facilities under Subchapter M will be subject to the financial assurance requirements of the Texas Department of State Health Services under adopted new §336.1235, Financial Assurance for Storage and Processing.

*§336.601. Applicability.*

The commission adopts amendments to §336.601(a) to apply the standards of Subchapter G to the decommissioning of radioactive substance storage and processing facilities. Financial assurance requirements for radioactive substance storage and processing facilities will be determined under the requirements of the Texas Department of State Health Services under §336.1235. In response to comments, §336.601(a) has been modified to remove the applicability of Subchapter G decommissioning requirements to licenses authorizing source material recovery or by-product disposal under Subchapter L. All decommissioning requirements for source material recovery or by-product disposal are included in Subchapter L.

*§336.613. Additional Requirements.*

The commission adopts amendments to §336.613(b) to include a reference to new §336.1211 so that applications for licenses authorizing the commercial storage and processing of radioactive substances under Subchapter M of Chapter 336 include a decommissioning plan under the requirements of Subchapter G of Chapter 336.

*§336.619. Financial Assurance for Decommissioning.*

The commission adopts amendments to §336.619(b) to include references to Subchapter K of Chapter 336 so that financial assurance is provided for decommissioning activities in the amount of the cost estimates provided in the decommissioning plan. In response to comments, §336.619(b) has been modified to remove the applicability of Subchapter G decommissioning requirements to licenses authorizing source material recovery or by-product disposal under Subchapter L. All decommissioning requirements for source material recovery or by-product disposal are included in Subchapter L. Section

336.619(a) has also been modified to indicate that financial assurance for storage and processing facilities licensed under Subchapter M are subject to the financial assurance requirements of the Texas Department of State Health Services under §336.1235. While decommissioning requirements and cost estimates for decommissioning of storage and processing facilities are addressed in Subchapter G, the existing Texas Department of State Health Services requirements for financial mechanisms will apply.

The commission adopts amendments to §336.619(c) to clarify that the decommissioning funding plan provided in the subsection only applies to inactive disposal sites licensed before January 1, 1998, and does not apply to new or existing licenses issued under Subchapters K and M of Chapter 336.

*SUBCHAPTER L: LICENSING OF SOURCE MATERIAL RECOVERY AND BY-PRODUCT MATERIAL DISPOSAL FACILITIES.*

The commission adopts a new Subchapter L in Chapter 336 for the licensing of Source Material Recovery and By-product Material Disposal Facilities. The commission intends to transfer the requirements from the department's rules in 25 TAC §289.260 on uranium recovery and by-product disposal, format the rule into sections, and add clarification as appropriate. The commission intends to integrate the new Subchapter L licensing program into the commission's existing radioactive material program requirements for application processing, public notice, public participation, licensing fees, and enforcement. Therefore, references in 25 TAC §289.260 to the department's procedural requirements are replaced with the appropriate reference to the commission's procedures. The commission has modified the title of Subchapter L as proposed by changing "uranium" to "source material."

*§336.1101. Purpose.*

The commission adopts new §336.1101 to establish the purpose of Subchapter L, implementing the department's provisions in 25 TAC §289.260(a). The commission has modified the section as proposed by changing "uranium" to "source material." Source material includes uranium or thorium.

*§336.1103. Scope.*

The commission adopts new §336.1103 to establish the scope of the requirements of Subchapter L, implementing the department's provisions in 25 TAC §289.260(b). Subchapter L licensees are subject to Subchapters A - E, as applicable. Section 336.1103 has been modified from the proposal to remove the reference to Subchapter G. All decommissioning requirements for licenses under Subchapter L are addressed within Subchapter L.

*§336.1105. Definitions.*

The commission adopts new §336.1105 to establish definitions for Subchapter L, implementing the department's provisions in 25 TAC §289.260(c). In response to comment, the definition of "commencement of construction" in §336.1105(8) has been modified to indicate that the term does not include changes desirable for the temporary use of the land for public recreational uses. In response to comment, the definition of "existing portion" in §336.1105(12) has been modified to include "uranium or thorium" before the word "by-product." In response to comment, the definition of "Security" in §336.1105(26) has been modified to delete the word surety. "Security" has the same meaning as "financial assurance." In response to comments, the definition of "unrefined and unprocessed ore" in §336.1105(28) has been modified to remove the phrase "solution extracting."

*§336.1107. Filing Application for Specific Licenses.*

The commission adopts new §336.1107 to establish application requirements for a Subchapter L license, implementing the department's provisions in 25 TAC §289.260(d). An application for a license under Subchapter L is subject to the commission's license application requirements in §336.205, Application Requirements.

*§336.1109. General Requirements for the Issuance of Specific Licenses.*

The commission adopts new §336.1109 to establish general requirements for the issuance of specific licenses, implementing the department's provisions in 25 TAC §289.260(e). The commission revises the qualifications for the radiation safety officer to reflect recommendations from the Nuclear Regulatory Commission for minimum education and experience required for a radiation safety officer at a source material recovery or by-product material disposal facility, and these new requirements are consistent with the practice of the department.

*§336.1111. Special Requirements for a License Application for Source Material Recovery and By-product Material Disposal Facilities.*

The commission adopts new §336.1111 to establish special requirements for a license application for source material recovery and by-product material disposal facilities, implementing the department's provisions in 25 TAC §289.260(f). The discussion of this section in the proposal preamble did not reflect the actual organization of the proposed rule. The proposal preamble described subsections using letters (a) - (c) while the actual rule language used numbered paragraphs (1) - (3). The adopted rules use only numbered paragraphs.

The commission has modified the title of the section that was proposed to substitute "source material" for "uranium."

The commission adopts new §336.1111(1)(G) to include the department's application requirement in 25 TAC §289.252(e)(7) for the submission of an operating, safety, and emergency procedures manual.

The commission adopts new §336.1111(1)(H) to include the department's application requirement in 25 TAC §289.252(e)(9) for landowner acknowledgment of licensed activities and the landowner's recognition that decommissioning may be required even if the licensee is unable or fails to perform required decommissioning. In response to comments, §336.1111(1)(H) has been modified to use the term "licensed site."

The commission adopts new §336.1111(2) to allow certain construction activities prior to the issuance of a license, implementing Section 33(l) of SB 1604. Under Section 33(l) of SB 1604, the applicant for a by-product disposal license that was filed with the department prior to January 1, 2007, may begin major construction related to the activities for which the license application was made at the time technical review has been made and an environmental analysis is prepared at its own risk and to the extent that such construction is not prohibited under federal law.

The commission adopts new §336.1111(3) with changes from the proposal. This change reflects compliance with applicable law regarding engineering, geoscience, or surveying information submitted in an application for a license. The existing requirement may have created confusion by only stating that facility drawings must be signed, sealed, and dated in accordance with the requirements of the Texas

Board of Professional Engineers. The adopted provision in §336.1111(3) requires that all application materials be submitted in compliance with the applicable requirements of the Texas Engineering Practice Act, the Texas Geoscience Practice Act, and the Professional Land Surveying Practices Act.

*§336.1113. Specific Terms and Conditions of Licenses.*

The commission adopts new §336.1113 to establish specific terms and conditions of licenses, implementing the department's provisions in 25 TAC §289.260(g). The discussion of this section in the proposal preamble did not reflect the actual organization of the proposed rule. The proposal preamble described subsections using letters (a) - (j) while the actual rule language used numbered paragraphs (1) - (10). The adopted rules use only numbered paragraphs.

The commission adopts a reference in new §336.1113(3) to the commission's spill rules in 30 TAC Chapter 327. The reporting and response to spills of radioactive materials are covered under Chapter 336. Spills of non-radioactive materials are subject to the additional requirements of the Chapter 327. In response to comments, proposed §336.1113(4) requiring the review of financial qualifications was deleted because there will be an annual review of financial assurance. SB 1604 amended statutory requirements on the review of a applicant's financial qualifications. Before a license is issued or renewed, an applicant must demonstrate that the applicant is financially qualified to conduct licensed activities by providing adequate financial assurance. Financial assurance will be reviewed annually under the existing requirements of the Texas Department of State Health Services. Proposed §336.1113(5) - (10) have been renumbered as §336.1113(4) - (9). The commission adopts new §336.1113(4) - (9) to add standard terms to a license issued under Subchapter L. These new standard license provisions are similar to standard terms in all TCEQ issued permits, are similar to the license terms for commercial low-level radioactive

disposal and Naturally Occurring Radioactive Material (NORM) disposal licenses issued under Subchapters H and K of Chapter 336, and are consistent with terms of licenses issued by the department.

*§336.1115. Expiration and Termination of Licenses; Decommissioning of Sites, Separate Buildings or Outdoor Areas.*

The commission adopts new §336.1115 to establish requirements for the expiration and termination of licenses and for the decommissioning of sites, separate buildings or outdoor areas, implementing the department's provisions in 25 TAC §289.260(h).

The commission adopts new §336.1115(a) to establish that licenses issued under Subchapter L may be issued for a term not to exceed ten years. The licenses issued by the department were subject to a two-year term. The department's requirements distinguished a two year administrative renewal from a ten-year technical renewal. Rather than implement both of these types of renewals, the commission adopts a ten-year license term. The expiration of a license does not relieve the licensee from the requirements of Chapter 336, including financial assurance and decommissioning obligations. In addition, the commission adopts application and annual fees in Subchapter B.

In response to comment, new §336.1115(e)(4) was added to require that no individual member of the public will receive an effective dose equivalent in excess of 100 mrem (1 mSv) per year as calculated by the methodology provided in NUREG-1620, Appendix H - "Guidance to the U.S. Nuclear Regulatory Commission Staff on the Radium Dose Approach." The NRC had previously raised this issue of compatibility with the department. Since it had not been addressed, the NRC reiterated the comment in their review of the commission's proposed rule.

*§336.1117. Renewal of Licenses.*

The commission adopts new §336.1117 to establish requirements for the renewal of a license issued under Subchapter L, implementing the department's provisions in 25 TAC §289.260(i). The department's rules include provisions for both a two-year administrative renewal and a ten-year technical renewal. Rather than implement both of these types of renewals, the commission adopts a ten-year renewal term.

*§336.1119. Amendment of Licenses at Request of Licensee.*

The commission adopts new §336.1119 to establish requirements for amendment applications for a license issued under Subchapter L, implementing the department's provisions in 25 TAC §289.260(j).

*§336.1121. Agency Action of Applications to Renew or Amend.*

The commission adopts new §336.1121 to establish requirements for considering applications to amend or renew licenses issued under Subchapter L, implementing the department's provisions in 25 TAC §289.260(k).

*§336.1123. Transfer of Material.*

The commission adopts new §336.1123 to establish requirements for transferring radioactive materials, implementing the department's provisions in 25 TAC §289.260(l).

*§336.1125. Financial Security Requirements.*

The commission adopts new §336.1125 to establish requirements for financial security.

The commission has modified this section from proposal. The commission had proposed specific financial assurance requirements for both existing licensees subject to the SB 1604 transfer, pending applications and future licensees. In light of comments received on financial assurance requirements, the commission has decided to address specific financial assurance requirements in future rulemaking. The commission adopts §336.1125 to provide that financial assurance must be provided in accordance with the requirements of the Texas Department of State Health Services in 25 TAC Chapter 289, Radiation Control. Under Section 33(d) of SB 1604, a rule of the Texas Department of State Health Services related to a responsibility, duty, activity, function, or program transferred by SB 1604 is enforceable as a rule of the Texas Commission on Environmental Quality until the commission adopts other rules. Under §336.1125, the commission will continue to use the applicable rules of the Texas Department of State Health Services for financial assurance for a license or application under Subchapter L of Chapter 336 until the commission adopts other rules on financial assurance. Section 336.1125 maintains the requirements to have financial assurance and determining the appropriate amount of financial assurance coverage under the requirements of Subchapter L, while using the Texas Department of State Health Services rules for the specific requirements of financial assurance mechanisms.

*§336.1127. Long-term Care and Maintenance Requirements.*

The commission adopts new §336.1127 to establish requirements for long-term care and maintenance of facilities licensed under Subchapter L, implementing the department's provisions in 25 TAC §289.260(n).

The commission adopts new §336.1127(c), to change the assumed real interest rate from 1% to 2%, consistent with the assumed real interest rate, above inflation, of 2%, used for the funding for institutional control for the low-level radioactive waste disposal license in Subchapter H.

*§336.1129. Technical Requirements.*

The commission adopts new §336.1129 to establish technical requirements for facilities licensed under Subchapter L, implementing the department's provisions in 25 TAC §289.260(o). In response to comment, §336.1129(i)(1) has been modified to add "uranium or thorium" before "by-product."

*§336.1131. Land Ownership of By-product Material Disposal Sites.*

The commission adopts new §336.1131 to establish requirements for land ownership of by-product material disposal sites, implementing the department's provisions in 25 TAC §289.260(p).

*§336.1133. Maximum Values for Use in Groundwater Protection.*

The commission adopts new §336.1133 to establish values for concentrations of certain constituents for use in groundwater protection, implementing the department's provisions in 25 TAC §289.260(q).

*§336.1135. Construction Activities.*

The commission adopts new §336.1135 to establish requirements for construction activities that may occur at a proposed facility before a license is issued under Subchapter L, implementing Section 33(l) of SB 1604. In response to comments, §336.1135 was modified to provide that the section only applies to applications for licenses authorizing by-product disposal that were submitted to the department on or before January 1, 2007.

*SUBCHAPTER M: LICENSING OF RADIOACTIVE SUBSTANCES PROCESSING AND STORAGE FACILITIES.*

The commission adopts a new Subchapter M in Chapter 336 for the licensing of Radioactive Substances Processing and Storage Facilities. The commission intends to transfer the technical requirements from the department's rules in 25 TAC §289.254 for commercial storage and processing, format the rule into sections, and add clarification as appropriate. The commission intends to integrate the new Subchapter M licensing program into the commission's existing radioactive material program requirements for application processing, public notice, public participation, licensing fees, and enforcement. Therefore, references in 25 TAC §289.254 to the department's procedural requirements are replaced with the appropriate reference to the commission's procedures. Throughout the subchapter, the term "radioactive substance" has been substituted for "radioactive waste" to reflect the definition of radioactive substance provided in the TRCA.

*§336.1201. Purpose and Scope.*

The commission adopts new §336.1201 to establish the purpose and scope of the requirements of Subchapter M for commercial radioactive substances storage and processing, implementing the department's provisions in 25 TAC §289.254(a).

*§336.1203. Definitions.*

The commission adopts new §336.1203 to establish definitions for Subchapter M, implementing the department's provisions in 25 TAC §289.254(b).

*§336.1205. Activities Requiring License.*

The commission adopts new §336.1205 to establish that a license or exemption under Subchapter M is required before a person may receive, possess, store, or process radioactive substances from other persons.

*§336.1207. Radioactive Substances Processing and Storage Facility Classification.*

The commission adopts new §336.1207 to establish classifications for radioactive substances processing and storage facilities, implementing the department's provisions in 25 TAC §289.254(d).

*§336.1209. Exemptions.*

The commission adopts new §336.1209 to establish exemptions for radioactive substances processing and storage, implementing the department's provisions in 25 TAC §289.254(e).

*§336.1211. Filing Application for a Specific License.*

The commission adopts new §336.1211 to establish requirements for the submission of an application for a license under Subchapter M, implementing the department's provisions in 25 TAC §289.254(f).

The commission adopts new §336.1211(4)(T) to include the department's application requirement in 25 TAC §289.252(e)(7) for the submission of an operating, radiation safety, and emergency procedures manual.

The commission adopts new §336.1211(4)(U) to include the department's application requirement in 25 TAC §289.252(e)(9) for landowner acknowledgment of licensed activities and the landowner's

recognition that decommissioning may be required even if the licensee is unable or fails to perform required decommissioning.

*§336.1213. Additional Environmental Requirements.*

The commission adopts new §336.1213 to establish additional requirements for a storage and processing facility, implementing the department's provisions in 25 TAC §289.254(g). In response to comments, the proposed language applying the requirements of the section only to Class III facilities was removed so that the section applies to all storage and processing facilities.

*§336.1215. Issuance of Licenses.*

The commission adopts new §336.1215 to establish requirements for the issuance of a license under Subchapter M, implementing the department's provisions in 25 TAC §289.254(h). The commission also adopts the minimum qualifications for the radiation safety officer required for radioactive substances storage and processing facilities which are consistent with the practice of the department for approving radiation safety officer designations at licensed facilities.

*§336.1217. Commencement of Major Construction.*

The commission adopts new §336.1217 to prohibit major construction until a license has been issued by the commission. License applications under Subchapter M are not subject to the pre-licensing construction authorization provided in Section 33(l) of SB 1604.

*§336.1219. Commencement of Operations.*

The commission adopts new §336.1219 to prohibit operations until a license has been issued and the licensee has obtained all licenses or permits required from other agencies, implementing the department's provisions in 25 TAC §289.254(j).

*§336.1221. Specific Terms and Conditions of Licenses.*

The commission adopts new §336.1221 to establish specific license terms and conditions for a license issued under Subchapter M, implementing the department's provisions in 25 TAC §289.254(k). The discussion of this section in the proposal preamble did not reflect the actual organization of the proposed rule. The proposal preamble described paragraphs using numbers (1) - (10) while the actual rule language used lettered subsections (a) - (c). The adopted rules use lettered subsections.

The commission adopts new §336.1221(b) and (c) to establish the specific license terms required by the department's provisions in 25 TAC §289.252(w)(2) and (x)(3).

*§336.1223. Renewal of Licenses.*

The commission adopts new §336.1223 to establish requirements for the renewal of a license under Subchapter M, implementing the department's provisions in 25 TAC §289.254(l). The department's licensing program distinguished a two-year administrative renewal from a ten-year technical renewal. Rather than implement both of these types of renewals, the commission adopts a ten-year license period.

*§336.1225. Amendment of License at Request of Licensee.*

The commission adopts new §336.1225 to establish requirements for amendment of licenses under Subchapter M, implementing the department's provisions in 25 TAC §289.254(m).

*§336.1227. Radioactive Substances Processing and Packaging Requirements.*

The commission adopts new §336.1227 to establish requirements for radioactive substances processing and packaging, implementing the department's provisions in 25 TAC §289.254(n).

*§336.1229. Environmental Assessment.*

The commission adopts new §336.1229 to establish requirements for an environmental assessment for a license under Subchapter M, implementing the department's provisions in 25 TAC §289.254(o).

*§336.1231. Radioactive Substances Processing and Storage Categories of Radionuclides.*

The commission adopts new §336.1231 to establish categories of radionuclides for radioactive substances and processing under Subchapter M, implementing the department's provisions in 25 TAC §289.254(p).

*§336.1233. Radiation Safety Committee.*

The commission adopts new §336.1233 to establish requirements for a radiation safety committee, implementing the department's provisions in 25 TAC §289.252(g).

*§336.1235. Financial Assurance for Storage and Processing.*

The commission adopts new §336.1235 to establish financial assurance requirements for facilities licensed under Subchapter M. Decommissioning and the requirement to have financial assurance for decommissioning of facilities licensed under Subchapter M are required under the provisions of Subchapter G of Chapter 336.

The commission has modified this section from proposal. The commission had proposed specific financial assurance requirements for both existing licensees subject to the SB 1604 transfer, pending applications and future licensees. In light of comments received on financial assurance requirements, the commission has decided to address specific financial assurance requirements in future rulemaking. The commission adopts §336.1235 to provide that financial assurance must be provided in accordance with the requirements of the Texas Department of State Health Services in 25 TAC Chapter 289. Under Section 33(d) of SB 1604, a rule of the Texas Department of State Health Services related to a responsibility, duty, activity, function, or program transferred by SB 1604 is enforceable as a rule of the Texas Commission on Environmental Quality until the commission adopts other rules. Under §336.1235, the commission will continue to use the applicable rules of the Texas Department of State Health Services for financial assurance for a license or application under Subchapter M of Chapter 336 until the commission adopts other rules on financial assurance.

#### FINAL REGULATORY IMPACT ANALYSIS DETERMINATION

The commission reviewed the rulemaking action in light of the regulatory analysis requirements of Texas Government Code, §2001.0225, and determined that the action is not subject to §2001.0225 because it does not meet the definition of a "major environmental rule" as defined in the statute. "Major environmental rule" means a rule, the specific intent of which, is to protect the environment or reduce risks to human health from environmental exposure and that may adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. The amendments to Chapter 336 are not anticipated to adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state, because there are no

significant requirements added to radioactive substance disposal facilities, source material recovery facilities, or commercial radioactive substances storage and processing facilities. The rulemaking action implements legislative requirements in SB 1604, transferring responsibilities for the regulation of source material recovery, by-product disposal, and commercial radioactive substances storage and processing from the department to the commission. The rulemaking in Chapter 336 transfers the technical requirements for these licensing programs from the department's existing rules to the commission's rules. The rulemaking also integrates the transferring license programs into existing commission procedural requirements in Chapters 39 and 281.

Furthermore, the rulemaking action does not meet any of the four applicability requirements listed in Texas Government Code, §2001.0225(a). Texas Government Code, §2001.0225 only applies to a major environmental rule, the result of which is to: 1) exceed a standard set by federal law, unless the rule is specifically required by state law; 2) exceed an express requirement of state law, unless the rule is specifically required by federal law; 3) exceed a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement a state and federal program; or 4) adopt a rule solely under the general powers of the agency instead of under a specific state law.

The rulemaking action does not exceed a standard set by federal law, an express requirement of state law, a requirement of a delegation agreement, nor does it adopt a rule solely under the general powers of the agency. THSC, Chapter 401, authorizes the commission to regulate the disposal of most radioactive substances in Texas. THSC, §§401.051, 401.103, 401.104, and 401.412 authorize the commission to adopt rules for the control of sources of radiation and the licensing of the disposal of radioactive

substances. In addition, the State of Texas is an "Agreement State" authorized by the United States Nuclear Regulatory Commission (NRC) to administer a radiation control program under the Atomic Energy Act of 1954, as amended (Atomic Energy Act). The rules do not exceed the standards set by federal law.

The rules do not exceed an express requirement of state law. THSC, Chapter 401, establishes general requirements for the licensing and disposal of radioactive substances, source material recovery, and commercial radioactive substances storage and processing. The purpose of the rulemaking is to implement statutory requirements consistent with recent amendments to THSC, Chapter 401, as provided in SB 1604.

The rules do not exceed a requirement of a delegation agreement or contract between the state and an agency of the federal government. The State of Texas has been designated as an "Agreement State" by the NRC under the authority of the Atomic Energy Act. The Atomic Energy Act requires that the NRC find that the state radiation control program is compatible with the NRC requirements for the regulation of radioactive materials and is adequate to protect health and safety. Under the *Agreement Between the United States Nuclear Regulatory Commission and the State of Texas for Discontinuance of Certain Commission Regulatory Authority and Responsibility Within the State Pursuant to Section 274 of the Atomic Energy Act of 1954, as Amended*, NRC requirements must be implemented to maintain a compatible state program for protection against hazards of radiation. The rules do not exceed the NRC requirements nor exceed the requirements for retaining status as an "Agreement State."

These rules are adopted under specific authority of THSC, Chapter 401. THSC, §§401.051, 401.103, 401.104, and 401.412 authorize the commission to adopt rules for the control of sources of radiation and the licensing of the disposal of radioactive substances.

The commission invited public comment of the draft regulatory impact analysis determination. No comments were received on the draft regulatory impact analysis determination.

#### TAKINGS IMPACT ASSESSMENT

The commission evaluated rulemaking action and performed an assessment of whether Texas Government Code, Chapter 2007 is applicable. The commission's assessment indicates that Texas Government Code, Chapter 2007 does not apply to these rules. These rules implement SB 1604, transferring certain regulatory responsibilities for the control of radioactive material from the department to the commission. This rulemaking is reasonably taken to fulfill an obligation required by federal law for the control of radioactive material, which is an exempt action under Texas Government Code, §2007.003(b)(4).

Nevertheless, the commission further evaluated these rules and performed an assessment of whether these rules constitute a taking under Texas Government Code, Chapter 2007. The purpose of these rules is to implement changes to the TRCA required by SB 1604, 80th Legislature, 2007 for the regulation and licensing of the disposal of radioactive substances, recovery of source material, and commercial radioactive substances processing and storage. The rules would substantially advance this purpose by transferring department requirements into commission rules to conform to the new statutory designation of jurisdiction.

Promulgation and enforcement of these rules would be neither a statutory nor a constitutional taking of private real property. The rules do not affect a landowner's rights in private real property because this rulemaking action does not burden (constitutionally), nor restrict or limit, the owner's right to property and reduce its value by 25% or more beyond which would otherwise exist in the absence of the regulations. The rules implement SB 1604 which changes the state agency responsible for oversight of certain activities under the TRCA. The rules do not change the existing technical requirements that were in place under the department's program. Therefore, the commission's rules do not affect real property in a manner that is different than may have been affected under the department's requirements.

#### CONSISTENCY WITH THE COASTAL MANAGEMENT PROGRAM

The commission reviewed this rulemaking action and determined that the rules are neither identified in, nor will they affect, any action/authorization identified in Coastal Coordination Act Implementation Rules in 31 TAC §505.11, relating to Actions and Rules Subject to the Texas Coastal Management Program (CMP). Therefore, the rulemaking action is not subject to the CMP.

#### PUBLIC COMMENT

The commission held a public hearing on September 25, 2007. The comment period closed on October 15, 2007. Comments were received from Mesteña Uranium, L.L.C. (Mesteña); the Lone Star Chapter of the Sierra Club (Sierra Club); the Uranium Committee of the Texas Mining and Reclamation Association (TMRA); Kelly Hart & Hallman LLP on behalf of Uranium Energy Corp., AREVA NC, Inc., and Uranerz Energy Corporation (UAU); Hance Scarborough Wright Woodward & Weisbart on behalf of Waste Control Specialists LLC (WCS); the Texas Radiation Advisory Board (TRAB), and the United

States Nuclear Regulatory Commission (NRC). Mesteña supports the revisions as necessary for the orderly and complete program transfer of the radioactive materials programs that oversee uranium recovery operations. The Sierra Club commented that the Sierra Club is pleased with the proposed rules overall and that the proposed rules adequately implement the statutory changes made by SB 1604. TMRA commented on its appreciation of the time and effort the TCEQ has put forth as part of the rulemaking process. Specific comments are addressed below.

## RESPONSE TO COMMENTS

### *Scope and General Provisions*

Mesteña and TMRA commented that the revision to §336.1(a) should not include a reference to mining because mining is not a licensed activity under the NRC program and that mining in Texas is regulated by the Railroad Commission of Texas.

**The commission agrees with the comment. The addition of references to "mining" in the proposed rules was intended only to provide explanation to the public who may not be familiar with the term "recovery" as applied to radioactive materials. Section 336.1(a) has been modified in response to comment to remove the term "mine."**

### *Radioactive Substance Fees*

The Sierra Club expressed support for the proposed fees and stated that the commission should keep audited records of the amount of time and resources devoted to license applications so that fees can be adjusted as needed.

**The commission appreciates the comment. The commission has a process in place to track, document, assess, and invoice for the cost of administering regulatory activities associated with specific application reviews and other licensing actions. No changes were made in response to this comment.**

WCS commented that §336.105(f) should be revised because SB 1604 only authorizes the recovery of the commission's costs for conducting the technical review of the application and does not allow the commission to recover costs from an applicant for the administrative review and contested case hearings.

**The commission disagrees with the comment. THSC, §401.412 specifically states that: "The commission may assess and collect an annual fee for each license and registration and for each application in an amount sufficient to recover its reasonable costs to administer its authority under this chapter." The costs associated with the entire application review and costs related to a contested case hearing would be part of administering the commission's authority to regulate the transferred programs. Senate Bill 1604, Section 33(h) also states that: "The commission may assess and collect additional fees from an applicant affected by performance under a contract under this subsection to recover the commission's contracting costs." If contractors were needed as witnesses for a contested case hearing, then the commission would incur costs under a contract, which would be recoverable under this provision. Although SB 1604, Section 33(k)(2) provides specific direction on the technical review of applications affected by the transfer, it does not negate the other cost recovery provisions provided in the THSC and elsewhere in SB 1604. No changes were made in response to this comment.**

*General Licensing Requirements*

WCS agrees with the change to §336.207(4) to specify that the land ownership requirements of the paragraph apply only to an application for the commercial disposal of low-level radioactive waste.

**The commission appreciates the comment. No changes were made in response to this comment.**

*Method of Obtaining Approval of Proposed Activities*

TMRA comments that §336.213(a) uses the term "process" in two different ways and requests definition of the term "process."

**The commission appreciates the comment. The first use of the term "process" in §336.213(a) has the same definition as used in §336.1203 and means storage, extraction of materials, transfer, volume reduction, compaction, incineration, solidification, or other separation and preparation of radioactive substances from other persons for reuse or disposal, including any treatment or activity that renders waste less hazardous, safer for transport, or amenable to recovery, storage, or disposal. The second use of the term has the same definition as provided in THSC, §401.261(2) and means the possession, use, storage, extraction of material, transfer, volume reduction, compaction or other separation incidental to recovery of source material. No changes were made in response to this comment.**

*Applicability of Subchapter G*

Mesteña and TMRA request clarification on the applicability of Subchapter G to the decommissioning of facilities licensed under Subchapter L. Mesteña also requests definition of the term "ancillary facilities."

WCS commented that uranium recovery and by-product disposal licensees are subject to the decommissioning requirements of Subchapter L and not the requirements of Subchapter G.

**The commission agrees with the comments. All decommissioning requirements for licenses under Subchapter L are covered in Subchapter L. Sections 336.601 and 336.619 have been modified to remove the applicability of Subchapter G decommissioning requirements to licenses authorizing source material recovery or by-product disposal under Subchapter L.**

*Licensing of Source Material Recovery and By-product Disposal Activity*

WCS comments that Subchapter L of Chapter 336 directly relates to the technical requirements for the licensing of by-product disposal and that SB 1604 requires that the commission rules must mirror the existing department regulations for the licensing of by-product disposal.

**The commission disagrees with the comment. SB 1604 does not provide that the commission must adopt rules that mirror the existing department regulations. SB 1604, Section 33(d) as a whole, provides that the legislation itself maintains the status quo with respect to any act, obligation, right, license, permit, requirement, or penalty because of the transfer of the jurisdiction over the regulatory program from the department to the commission. The commission is required to continue proceedings of the department related to programs transferred under SB 1604. And, under the third sentence of SB 1604, Section 33(d), "a rule of the Health and Human Services Commission or the Department of State Health Services related to a responsibility, duty, activity, function, or program transferred by this Act is enforceable as a rule of the Texas Commission on Environmental Quality until the Texas Commission on Environmental Quality adopts other rules"**

**(emphasis added). THSC, §401.011(b) and Section 33(c) of SB 1604 provide the commission full responsibility for the administration and enforcement of laws related to licensing of the disposal of radioactive substances, the processing or storage of low-level radioactive waste or non oil and gas naturally occurring radioactive materials, the recovery or processing of source material, the processing of by-product material, and sites for the disposal of radioactive substances. The commission has the authority to adopt these rules, including some changes from department requirements. Section 33(k)(1) of SB 1604 does provide that an application for a license to dispose of by-product material that was filed with the department prior to January 1, 2007 shall be processed by the commission and governed by the technical rules and regulations of the department that were effective on the effective date of SB 1604. The commission does not agree that all of the department's provisions in 25 TAC §289.260 and Subchapter L are technical requirements. The commission has implemented the technical requirements in §336.1129. As explained throughout this rulemaking process, it is the commission's intent to implement the technical requirements for the transferred programs and integrate the programs into existing commission requirements for public participation, application processing, and enforcement. No changes were made in response to this comment.**

*Definitions*

The NRC comments that the definition of "commencement of construction" in §336.1105(8) needs to include the phrase "but does not include changes desirable for the temporary use of the land for public recreational uses" to maintain compatibility with the NRC's definition in 40 Code of Federal Regulations (CFR) §40.4.

**The commission agrees with the comment and has modified §336.1105(8) to include the phrase "but does not include changes desirable for the temporary use of the land for public recreational uses."**

The NRC comments that the definition of "existing portion" in §336.1105(12) needs to include the phrase "uranium or thorium" before "by-product materials" to maintain compatibility with the NRC's definitions in 10 CFR Part 40 Appendix A.

**The commission agrees with the comment and has modified §336.1105(12) to include "uranium or thorium" before "by-product materials."**

TMRA requests clarification on the definition of "licensed site" in §336.1105(18) and requests reconciliation with the term "facility" in Subchapter T of Chapter 37. TMRA also commented that "contiguous" and "ancillary" are not defined.

**The commission appreciates the comment. "Licensed site" has the same meaning as the same term in the NRC's rules in 10 CFR Part 40, Appendix A. The requirements of Subchapter L cover the activities requiring financial assurance. Contiguous means all land within a site boundary, as defined in §336.2(124), that is owned, leased, or otherwise controlled by the licensee. Ancillary is used in Subchapter G of Chapter 336. In response to comments, Subchapters G and L have been modified to provide that all decommissioning requirements for licenses under Subchapter L are covered in Subchapter L. Ancillary means auxiliary. In light of comments received on financial assurance requirements, the commission has decided to address specific financial assurance requirements in future rulemaking. The commission adopts §336.1135 to provide that financial**

**assurance must be provided in accordance with the requirements of the Texas Department of State Health Services in 25 TAC Chapter 289. Under Section 33(d) of SB 1604, a rule of the Texas Department of State Health Services related to a responsibility, duty, activity, function, or program transferred by SB 1604 is enforceable as a rule of the Texas Commission on Environmental Quality until the commission adopts other rules. Under §336.1125, the commission will continue to use the applicable rules of the Texas Department of State Health Services for financial assurance for a license or application under Subchapter L of Chapter 336 until the commission adopts other rules on financial assurance. No changes were made in response to these comments.**

Mesteña and TMRA comment that definition of "security" in §336.1105(26) includes a parenthetical reference to "surety." Mesteña also comments the definition of "security" states that it is the same as "financial assurance," but "financial assurance" is defined in the rule.

**The commission appreciates the comment. The parenthetical reference to surety has been deleted in the adopted rule. "Financial assurance" and "financial security" have the same meaning and may be used interchangeably in commission rules.**

The NRC comments that the definition of "unrefined and unprocessed ore" in §336.1105(28) needs to be amended by removing the phrase "solution extracting" to maintain compatibility with the NRC's definition in 40 CFR §40.4.

**The commission appreciates the comment. The phrase "solution extracting" has been removed from the definition of "unrefined and unprocessed ore" in §336.1105(28) to remain compatible with the NRC's definition in 40 CFR §40.4.**

*General Requirements for the Issuance of Specific Licenses*

Mesteña comments that the rule change substantially increases the education and training requirements for the radiation safety officer and is consistent with U.S. Nuclear Regulatory Commission Regulatory Guidance 8.31.

**The commission appreciates the comment. No changes were made in response to the comment.**

WCS commented that §336.1109 should be modified to substitute the word "will" for "may" to provide that a license application will be approved if the agency determines the applicant has met certain requirements because the department's rules used the word "will."

**The commission does not agree with the comment. The use of the word "may" is appropriate because there may be instances where an applicant submits all information required under the radioactive substance rules but the application would not be approved for other reasons. For example, the commission could decide not to approve an application in consideration of the applicant's compliance history, the applicant's failure to comply with public notice or other procedural requirements, the applicant's failure to pay fees, or by court order. No changes were made in response to this comment.**

*Special Requirements for a License Application for Uranium Recovery and By-product Disposal*

*Facilities*

The Sierra Club supports the proposed language in §336.1111(2) on pre-license construction that provides that such construction is at the applicant's own risk because it makes it clear that the construction will not influence the licensing decision by the executive director.

**The commission agrees with the comment. No changes were made in response to the comment.**

WCS commented that §336.1111 should be modified to substitute the word "will" for "may" to provide that a license will be issued if the applicant meets the requirements in the rule because the department's rules used the word "will."

**The commission does not agree with the comment. The use of the word "may" is appropriate because there may be instances where an applicant meets all the requirements under this rule but the license would not be issued for other reasons. For example, the commission could decide not to issue a license in consideration of the applicant's compliance history, the applicant's failure to comply with public notice or other procedural requirements, the applicant's failure to pay fees, or by court order. No changes were made in response to this comment.**

TMRA questions whether the requirement in §336.1111(1)(G) for an adequate operating, radiation safety, and emergency response procedures manual is the same as the safety evaluation report and if so, this new requirement is not a concern for TMRA. WCS comments that §336.1111(1)(G) should be deleted because it is not required in the department rules.

**The commission disagrees with the comments. This procedures manual was required by the department in 25 TAC §289.252(e)(7) for licenses authorizing source material recovery or by-product disposal. The operations, radiation safety, and emergency response procedures manual is not the same as the safety evaluation report and is not a new requirement. The manual includes the procedures used by applicant or licensee in carrying out its licensed activities. No changes were made in response to this comment.**

TMRA questions how the term "site" used in §336.1111(1)(H) compares with the term "facility" and "ancillary facilities" used elsewhere in Chapter 336.

**The commission appreciates the comment. In response to the comment, §336.1111(1)(H) has been modified to use the term "licensed site" which has the meaning defined in §336.1105(18). The term "ancillary facilities" is used in Subchapter G of Chapter 336 and is not applicable to decommissioning under Subchapter L. No changes were made in response to this comment.**

WCS comments that §336.1111(1)(H) should be deleted because it was not a requirement in department rules.

**The commission disagrees with the comments. The requirement for landowner acknowledgment of licensed activities is based on the existing requirement in 25 TAC §289.252(e)(9) and is applicable to license applications authorizing source material recovery and by-product disposal. No changes were made in response to this comment.**

*Specific Terms and Conditions of Licenses*

The Sierra Club commented that proposed §336.1113(2) should be modified so that a licensee is required to report any release that extends beyond the license boundary, whether or not it exceeds the concentration for water listed in Table II, Column 2 of §336.359.

**The commission disagrees with the comment. The constituent concentration values in Table II, Column 2 of §336.359 are applicable to the assessment of doses to the public. As such, the constituent concentrations in Column 2 control doses to the public at 50 mrem per year, and have a built-in safety factor because the public dose limit is 100 mrem per year. No changes were made in response to the comment.**

Mesteña commented that proposed §336.1113(3) included an incorrect reference to Chapter 327, Spill Prevention and Control.

**The commission appreciates the comment. The preamble of the proposed rules included an incorrect citation to Chapter 327, Spill Prevention and Control. The proposed rule language had the correct citation. The language in the preamble has been corrected, and the correct citation is Chapter 327, Spill Prevention and Control. No changes were made in response to comment.**

Mesteña and TMRA comment that proposed §336.1113(4) requires a licensee to submit evidence of financial qualifications when Section 5 of SB 1604 amended THSC, §401.108 to provide that evidence of financial assurance shall be proof of financial qualifications. The Sierra Club commented that proposed §336.1113(4) creates confusion with requirements for annual review of financial assurance.

**The commission agrees with the comments. SB 1604 modified the statutory requirements for consideration of financial qualifications so that the financial qualifications of an applicant or licensee are determined by providing acceptable financial assurance. Financial assurance will be reviewed annually under the existing requirements of the Texas Department of State Health Services. Section 336.1113 has been modified in response to these comments to remove §336.1113(4). The rest of the section will be renumbered accordingly.**

WCS commented that proposed §336.1113(5) - (10) should be deleted because these provisions were not included in department rules.

**The commission disagrees with the comment. Because proposed §336.1113(4) was deleted in response to comments, proposed §336.1113(5) - (10) is adopted as §336.1113(4) - (9). Section 336.1113(4) - (9) is standard licensing requirements applicable to the other types of licenses issued under Chapter 336 and is consistent with requirements of the department or SB 1604. Section 336.1113(4) is a department requirement in 25 TAC §289.252(w)(3) that applies to licenses authorizing source material recovery or by-product disposal. Section 336.1113(5) is a department requirement in 25 TAC §289.252(x)(1) that applies to licenses authorizing source material recovery or by-product disposal. Section 336.1113(6) is a department requirement in 25 TAC §289.252(d)(10) that applies to licenses authorizing source material recovery or by-product disposal. Section 336.1113(7) is a department requirement in 25 TAC §289.252(x)(3) that applies to licenses authorizing source material recovery or by-product disposal. Section 336.1113(8), requiring executive director inspection and review of construction is authorized under Section 33(l) of SB**

**1604 which allows the commission to oversee the construction by a license applicant prior to license issuance. The provision on financial assurance in §336.1113(8) is consistent with the department's requirement to have acceptable financial assurance in place prior to commencement of operations in 25 TAC §289.260(m). Section 336.1113(9) is a department requirement in 25 TAC §289.252(w)(2) that applies to licenses authorizing source material recovery or by-product disposal. No changes were made in response to this comment.**

TMRA commented that §336.1113 imposes a number of new license conditions under §305.125 on uranium recovery licenses and asks for the legal basis to impose new permit conditions on such licenses.

**The commission appreciates the comment. The standard permit provisions of §305.125 are boiler-plate provisions that apply to many commission-issued permits. The commission has the authority to adopt rules to implement these conditions on licenses authorized under Subchapter L. THSC, §401.011(b) and Section 33(c) of SB 1604 provide the commission full responsibility for the administration and enforcement of laws related to licensing of the disposal of radioactive substances, the processing or storage of low-level radioactive waste or non oil and gas naturally occurring radioactive materials, the recovery or processing of source material, the processing of by-product material, and sites for the disposal of radioactive substances. Under Section 33 (d) of SB 1604, "a rule of the Health and Human Services Commission or the Department of State Health Services related to a responsibility, duty, activity, function, or program transferred by this Act is enforceable as a rule of the Texas Commission on Environmental Quality until the Texas Commission on Environmental Quality adopts other rules." Thus, the Texas Radiation and Control Act as amended by SB 1604, provides the commission with the authority to adopt rules and**

**establish license conditions to protect occupational health and safety, public health and safety, and the environment. No changes were made in response to this comment.**

*Expiration and Termination of Licenses; Decommissioning of Sites, Separate Buildings or Outdoor Areas.*

WCS commented that §336.1115(e)(3)(B) should be modified to include the phrase "so that no individual member of the public will receive an effective dose equivalent in excess of 100 mrem (1 mSv) per year" to match the department's rule relating to the concentration of natural uranium in soil. The NRC commented that §336.1115 needs to address the event that dose to a member of the public exceeds the 100 mrem limit. The comment had previously been submitted to the department, and the NRC reiterates the comment for the commission's rules.

**The commission appreciates the comments. New §336.1115(e)(4) was added to require that no individual member of the public will receive an effective dose equivalent in excess of 100 mrem (1 mSv) per year as calculated by the methodology provided in NUREG-1620, Appendix H - "Guidance to the U.S. Nuclear Regulatory Commission Staff on the Radium Dose Approach."**

*Renewal of Licenses*

WCS commented that §336.1117(c) should be modified to substitute the word "will" for "may" to provide that an application for renewal will be approved if certain requirements are satisfied because the department's rule used the word "will."

**The commission does not agree with the comment. The use of the word "may" is appropriate because there may be instances where an application for renewal meets all the requirements under this rule but the license would not be issued for other reasons. For example, the commission could decide to not issue a renewed license in consideration of the applicant's compliance history, the applicant's failure to comply with public notice or other procedural requirements, the applicant's failure to pay fees, or by court order. No changes were made in response to this comment.**

*Transfer of Material*

The Sierra Club commented that §336.1123(d)(3) should be deleted so that there can be no oral certification of the verification that a transferee is authorized for the receipt, type, form and quantity of waste received for emergency shipments of radioactive material.

**The commission disagrees with the comment. The provision in §336.1123(d)(3) is an NRC requirement in 10 CFR §40.51(c). This provision is required for compatibility as an Agreement State with the NRC. The state is required to maintain the essential objectives of this program element to avoid conflicts, duplication, or gaps with the NRC's regulatory program. The commission notes that this provision addresses emergency situations only and expects to be informed on the status of any emergency situation to ensure that radioactive materials transferred are appropriately received. No changes were made in response to this comment.**

*Financial Security Requirements*

WCS comments that §336.1125(a) should be modified to match department rules to provide that financial security for decontamination, decommissioning, reclamation, disposal, and other requirements be

established prior to the commencement of operations rather than 60 days prior to the receipt or possession of radioactive substances.

**In light of comments received on financial assurance requirements, the commission has decided to address specific financial assurance requirements in future rulemaking. The commission adopts §336.1125 to provide that financial assurance must be provided in accordance with the requirements of the Texas Department of State Health Services in 25 TAC Chapter 289. Under Section 33(d) of SB 1604, a rule of the Texas Department of State Health Services related to a responsibility, duty, activity, function, or program transferred by SB 1604 is enforceable as a rule of the Texas Commission on Environmental Quality until the commission adopts other rules. Under adopted §336.1125, the commission will continue to use the applicable rules of the Texas Department of State Health Services for financial assurance for a license or application under Subchapter L of Chapter 336 until the commission adopts other rules on financial assurance.**

WCS comments that §336.1125(f) should be modified to substitute "should" for "must" as stated in department rules to provide that the amount of financial assurance should be adjusted to recognize any increases or decreases resulting from inflation, changes in engineering plans, activities performed, and any other conditions affecting costs.

**In light of comments received on financial assurance requirements, the commission has decided to address specific financial assurance requirements in future rulemaking. The commission adopts §336.1125 to provide that financial assurance must be provided in accordance with the requirements of the Texas Department of State Health Services in 25 TAC Chapter 289. Under**

**Section 33(d) of SB 1604, a rule of the Texas Department of State Health Services related to a responsibility, duty, activity, function, or program transferred by SB 1604 is enforceable as a rule of the Texas Commission on Environmental Quality until the commission adopts other rules. Under adopted §336.1125, the commission will continue to use the applicable rules of the Texas Department of State Health Services for financial assurance for a license or application under Subchapter L of Chapter 336 the commission adopts other rules on financial assurance.**

WCS commented that the last two sentences of §336.1125(f) requiring an annual submission of a cost estimate report and updated financial assurance are more stringent provisions than the three-year review provision required by the Nuclear Regulatory Commission in 10 CFR §40.36(4)(d) and should be deleted because the department rules did not include such provisions. Alternatively, WCS recommends that §336.1125(f) should be modified to allow the submittal of the cost estimate report to occur at a definitive date in the calendar year as determined by renewal of the parent company guarantee that must be authorized as an available financial assurance mechanism under Chapter 37, Subchapter T.

**In light of comments received on financial assurance requirements, the commission has decided to address specific financial assurance requirements in future rulemaking. The commission adopts §336.1125 to provide that financial assurance must be provided in accordance with the requirements of the Texas Department of State Health Services in 25 TAC Chapter 289. Under Section 33(d) of SB 1604, a rule of the Texas Department of State Health Services related to a responsibility, duty, activity, function, or program transferred by SB 1604 is enforceable as a rule of the Texas Commission on Environmental Quality until the commission adopts other rules. Under adopted §336.1125, the commission will continue to use the applicable rules of the Texas**

**Department of State Health Services for financial assurance for a license or application under Subchapter L of Chapter 336 the commission adopts other rules on financial assurance.**

WCS commented that §336.1125(g) should match the wording of 25 TAC §289.260(m)(7) for the term and renewal of the financial assurance mechanism.

**In light of comments received on financial assurance requirements, the commission has decided to address specific financial assurance requirements in future rulemaking. The commission adopts §336.1125 to provide that financial assurance must be provided in accordance with the requirements of the Texas Department of State Health Services in 25 TAC Chapter 289. Under Section 33(d) of SB 1604, a rule of the Texas Department of State Health Services related to a responsibility, duty, activity, function, or program transferred by SB 1604 is enforceable as a rule of the Texas Commission on Environmental Quality until the commission adopts other rules. Under adopted §336.1125, the commission will continue to use the applicable rules of the Texas Department of State Health Services for financial assurance for a license or application under Subchapter L of Chapter 336 the commission adopts other rules on financial assurance.**

WCS commented that the financial test should be retained as an available financial assurance mechanism for licenses issued under Subchapter L or M. WCS commented that §336.1125(i) should be deleted because the parent company guarantee allowed under department rules must be an available financial assurance mechanism under commission rules. WCS commented that a licensee that is allowed to use a parent company guarantee under department rules would be severely and detrimentally affected by a commission change that would not allow the use of the parent company guarantee.

**The commission agrees that the parent company guarantee was an option available under the department rules.**

**In light of comments received on financial assurance requirements, the commission has decided to address specific financial assurance requirements in future rulemaking. The commission adopts §336.1125 to provide that financial assurance must be provided in accordance with the requirements of the Texas Department of State Health Services in 25 TAC Chapter 289. Under Section 33(d) of SB 1604, a rule of the Texas Department of State Health Services related to a responsibility, duty, activity, function, or program transferred by SB 1604 is enforceable as a rule of the Texas Commission on Environmental Quality until the commission adopts other rules. Under adopted §336.1125, the commission will continue to use the applicable rules of the Texas Department of State Health Services for financial assurance for a license or application under Subchapter L of Chapter 336 the commission adopts other rules on financial assurance.**

*Technical Requirements*

The NRC commented that the groundwater protection standard in §336.1129(i) should apply to "uranium or thorium" by-product material to maintain compatibility with the NRC's groundwater protection requirements in 10 CFR Part 40 Appendix A, Criterion 5.

**The commission appreciates the comment. Section 336.1129(i) has been modified to add "uranium or thorium" before "by-product."**

WCS commented that §336.1129(i)(3) should be modified to replace the word "may" with the word "will" as stated in department rules so that an applicant or licensee will be exempted from the requirements of the groundwater protection standards if certain findings are made.

**The commission does not agree with the comment. The use of the word "may" is appropriate because there may be instances where an application for the exemption from the requirements for groundwater protection meet all the requirements under this rule but the application would not be approved for other reasons. For example, the commission could decide not to approve such an application in consideration of the applicant's compliance history, the applicant's failure to comply with public notice or other procedural requirements, the applicant's failure to pay fees, or by court order. No changes were made in response to this comment.**

WCS commented that §336.1129(j)(8) should be modified to replace the word "may" with the word "will" as stated in department rules so that the agency will establish a site-specific alternate concentration limit for a hazardous constituent if certain findings are made.

**The commission does not agree with the comment. The use of the word "may" is appropriate because there may be instances where an application to establish site-specific alternate concentrations meets all the requirements under this rule but the application would not be approved for other reasons. For example, the commission could decide to not approve an application in consideration of the applicant's compliance history, the applicant's failure to comply with public notice or other procedural requirements, the applicant's failure to pay fees, or by court order. No changes were made in response to this comment.**

The Sierra Club commented that §336.1129(h)(2) should not include a specific exemption into the rule, but rather, an applicant should have to prove any proposed deviations from a baseline requirement, such as the requirement to have rock covering of slopes, are not necessary to isolate waste and protect the facility from erosion potential.

**The commission disagrees with the comment. Section 336.1129(h)(2) requires that topographic features provide good wind protection. Vegetative cover is preferred under §336.1129(h)(4) but rock cover is identified as an alternative if vegetative cover cannot be self-sustaining under §336.1129(h)(5). These provisions are maintained for compatibility with the NRC's requirements in 10 CFR Part 40, Appendix A, Criterion 4. The use of an alternate design as provided in this instance is not an "exemption" from the applicability of a rule as contemplated in §336.5. The commission made no changes in response to this comment.**

The Sierra Club commented that the 18-month period allowed for the implementation of a corrective action program in §336.1129(k) is too long. The Sierra Club recommends a maximum of 9 months to develop and implement a corrective action program for documented evidence of groundwater contamination.

**The commission disagrees with the comment. The 18-month period allowed for the implementation of a corrective action program is based on NRC requirements in 10 CFR Part 40, Appendix A. This provision is required for compatibility as an Agreement State with the NRC. The state is required to maintain the essential objectives of this program element to avoid conflicts, duplication, or gaps with the NRC's regulatory program. No changes were made in response to the comment.**

*Construction Activities*

TMRA requests clarification on the type of activities and facilities that must comply with the requirements of §336.1135.

**The commission appreciates the comment. Section 336.1135 has been modified in response to this comment to provide that the pre-license construction provisions only apply to applications for by-product disposal that were submitted to the department on or before January 1, 2007. The Texas Radiation Control Act generally prohibits pre-license construction activities, but Section 33(l) of SB 1604 specifically authorized the construction as provided in §336.1135 to the extent that it is not prohibited under federal law.**

*Licensing of Radioactive Substances Processing and Storage Facilities*

*Filing an Application for a Specific License*

WCS commented that §336.1211(4)(T) and (4)(U) should be deleted because these provisions are new requirements for radioactive substances storage and processing applications that are not required in department rules.

**The commission does not agree with the comment. Section 336.1211(4)(T) and (4)(U) is not a new requirements. The operating, safety and emergency procedures manual is required by the department for radioactive substances storage and processing facilities in 25 TAC §289.252(e)(7). The certification from the owners of the real property on which the radioactive substances are stored is required by the department in 25 TAC §289.252(e)(9). No changes were made in response to this comment.**

*Additional Requirements for Class III Facilities*

The Sierra Club commented that the requirements of §336.1213 should apply to all Subchapter M facilities, not just Class III storage and processing facilities.

**The commission agrees with the comment and has modified §336.1213 to apply to all license applications under Subchapter M.**

*Issuance of Licenses*

WCS commented that §336.1215(a) should be modified to replace the word "may" with the word "will" as stated in department rules so that a license for a radioactive substances processing or storage facilities will be issued if the agency finds reasonable assurance that certain requirements are met.

**The commission does not agree with the comment. The use of the word "may" is appropriate because there may be instances where an applicant meets all the requirements under this rule but the license would not be issued for other reasons. For example, the commission could decide not to issue a license in consideration of the applicant's compliance history, the applicant's failure to comply with public notice or other procedural requirements, the applicant's failure to pay fees, or by court order. No changes were made in response to this comment.**

WCS commends the TCEQ for the new requirements in §336.1215(a)(5) related to the qualifications of the radiation safety officer.

**The commission appreciates the comment. No changes were made in response to the comment.**

## **SUBCHAPTER A: GENERAL PROVISIONS**

### **§336.1, §336.5**

#### STATUTORY AUTHORITY

The amendments are adopted under Texas Water Code, §5.103, concerning Rules, and §5.105, concerning General Policy, which authorize the commission to adopt rules necessary to carry out its powers and duties under the Texas Water Code and other laws of the state. The amendments are also adopted under Texas Health and Safety Code, Chapter 401, concerning Radioactive Materials and Other Sources of Radiation (also known as the Texas Radiation Control Act); §401.011, concerning Radiation Control Agency, which authorizes the commission to regulate and license the disposal of radioactive substances, the processing or storage of low-level radioactive waste or naturally occurring radioactive material, the recovery or processing of source material, and the processing of by-product material; §401.051, concerning Adoption of Rules and Guidelines, which authorizes the commission to adopt rules and guidelines relating to control of sources of radiation; §401.103, concerning Rules and Guidelines for Licensing and Registration, which authorizes the commission to adopt rules and guidelines that provide for licensing and registration for the control of sources of radiation; §401.104, concerning Licensing and Registration rules, which requires the commission to provide rules for licensing for the disposal of radioactive substances; §401.202, concerning Regulation of Low-Level Radioactive Waste Disposal, which authorizes the commission to regulate commercial processing and disposal of low-level radioactive waste; §401.262, concerning Management of Certain By-Product Material, which provides the commission authority to regulate by-product storage and processing facilities; and §401.412, concerning Commission Licensing Authority, which authorizes the commission to issue licenses for the disposal of radioactive substances.

The adopted amendments implement the Texas Health and Safety Code, as amended by SB 1604, 80th Legislature, 2007, §§401.011, 401.051, 401.103, 401.104, 401.151, 401.202, 401.262, 401.2625, and 401.412.

**§336.1. Scope and General Provisions.**

(a) Except as otherwise specifically provided, the rules in this chapter apply to all persons who dispose of radioactive substances; all persons who recover or process source material; and all persons who receive radioactive substances from other persons for storage or processing.

(1) However, nothing in these rules shall apply to any person to the extent that person is subject to regulation by the United States Nuclear Regulatory Commission (NRC) or to radioactive material in the possession of federal agencies.

(2) Any United States Department of Energy contractor or subcontractor or any NRC contractor or subcontractor of the following categories operating within the state, is exempt from the rules in this chapter, with the exception of any applicable fee set forth in Subchapter B of this chapter, to the extent that such contractor or subcontractor under his contract receives, possesses, uses, transfers, or acquires sources of radiation:

(A) prime contractors performing work for the United States Department of Energy at a United States government-owned or controlled site, including the transportation of radioactive

material to or from the site and the performance of contract services during temporary interruptions of transportation;

(B) prime contractors of the United States Department of Energy performing research in or development, manufacture, storage, testing, or transportation of atomic weapons or components thereof;

(C) prime contractors of the United States Department of Energy using or operating nuclear reactors or other nuclear devices in a United States government-owned vehicle or vessel; and

(D) any other prime contractor or subcontractor of the United States Department of Energy or the NRC when the state and the NRC jointly determine that:

(i) the exemption of the prime contractor or subcontractor is authorized by law; and

(ii) under the terms of the contract or subcontract, there is adequate assurance that the work thereunder can be accomplished without undue risk to the public health and safety or the environment.

(3) Radioactive material that is physically received from the federal government by a non-federal facility is subject to state jurisdiction except as provided in paragraph (2) of this subsection.

(4) The rules of this chapter do not apply to transportation of radioactive materials. This provision does not exempt a transporter from other applicable requirements.

(5) The rules in this chapter do not apply to the disposal of radiation machines as defined in this subchapter or electronic devices that produce non-ionizing radiation.

(b) Regulation by the State of Texas of source material, by-product material, and special nuclear material in quantities not sufficient to form a critical mass is subject to the provisions of the agreement between the State of Texas and the NRC and to 10 Code of Federal Regulations Part 150 (10 CFR Part 150) (Exemptions and Continued Regulatory Authority in Agreement States and in Offshore Waters Under Section 274). (A copy of the Texas agreement, "Articles of Agreement between the United States Nuclear Regulatory Commission and the State of Texas for Discontinuance of Certain Commission Regulatory Authority and Responsibility Within the State Pursuant to Section 274 of the Atomic Energy Act of 1954, as Amended" (Agreement), may be obtained from this commission.) Under the Agreement and 10 CFR Part 150, the NRC retains certain regulatory authorities over source material, by-product material, and special nuclear material in the State of Texas. Persons in the State of Texas are not exempt from the regulatory requirements of the NRC with respect to these retained authorities.

(c) No person may receive, possess, use, transfer, or dispose of radioactive material, which is subject to the rules in this chapter, in such a manner that the standards for protection against radiation prescribed in these rules are exceeded.

(d) Each person licensed by the commission under this chapter shall confine possession, use, and disposal of licensed radioactive material to the locations and purposes authorized in the license.

(e) No person may cause or allow the release of radioactive material, which is subject to the rules in this chapter, to the environment in violation of this chapter or of any rule, license, or order of the Texas Commission on Environmental Quality (commission).

(f) No person shall:

(1) dispose of low-level radioactive waste on site, except as authorized under §336.501(b) of this title (relating to Scope and General Provisions);

(2) receive low-level radioactive waste from other persons for the purpose of disposal, except for a person specifically licensed for the disposal of low-level radioactive waste;

(3) dispose of radioactive materials other than low-level radioactive waste, except for diffuse naturally occurring radioactive material waste having concentrations of less than 2000 pCi/g radium-226 or radium-228;

(4) dispose of radioactive materials from other persons other than low-level radioactive waste, except for naturally occurring radioactive material waste in accordance with Subchapter K of this chapter (relating to Commercial Disposal of Naturally Occurring Radioactive Material Waste from Public Water Systems);

(5) recover or process source material, except in accordance with Subchapter L of this chapter (relating to Licensing of Source Material Recovery and By-Product Material Disposal Facilities);

(6) store, process, or dispose of by-product material, except in accordance with Subchapter L of this chapter; or

(7) receive radioactive substances from other persons for storage or processing, except in accordance with Subchapter M of this chapter (relating to Licensing of Radioactive Substances Processing and Storage Facilities).

(g) For the purpose of this chapter, any time the term "low-level radioactive waste" is used, the provision also applies to accelerator-produced radioactive material.

**§336.5. Exemptions.**

(a) The commission may exempt a source of radiation or a kind of use or user from the application of a rule in this chapter if it determines that the exemption is not prohibited by law and will not result in a significant risk to public health and safety or the environment. Persons requesting an exemption shall submit an application to the agency using the process in Chapter 90 of this title (relating to Regulatory Flexibility), including the submittal of any fees and which includes:

(1) the nature of the request;

(2) a legal analysis to demonstrate that the exemption is not prohibited by law;

(3) a technical analysis to demonstrate that the exemption will not result in a significant risk to public health and safety or the environment; and

(4) a detailed explanation, including a demonstration as appropriate, that the proposed exemption is:

(A) not prohibited by law, including any requirement for a federally approved or authorized program; and

(B) at least as protective of the environment and the public health as the method or standard prescribed by the commission rule that would otherwise apply.

(b) A person who is subject to an order issued under Texas Health and Safety Code, §361.188 or §361.272, for sites subject to Texas Health and Safety Code, Subchapter F, Chapter 361, or an agreement entered into under Texas Health and Safety Code, §361.606, is exempt from the requirement to obtain a license or other authorization from the commission. This provision does not exempt the person from complying with technical standards under this chapter. The exemption applies only to the assessment and remediation of the contamination at the site.

(c) Waste, that is exempted from licensing requirements under Texas Health and Safety Code, §401.106(a), is exempted from the requirements of this chapter.

(d) Any material exempted from licensing requirements for disposal by the Texas Department of State Health Services under 25 TAC §289.251 and §289.259 prior to June 18, 2007 is exempted from the requirements of this chapter.

## **SUBCHAPTER B: RADIOACTIVE SUBSTANCE FEES**

### **§336.105**

#### STATUTORY AUTHORITY

The amendment is adopted under Texas Water Code, §5.103, concerning Rules, and §5.105, concerning General Policy, which authorize the commission to adopt rules necessary to carry out its powers and duties under the Texas Water Code and other laws of the state. The amendment is also adopted under Texas Health and Safety Code, Chapter 401, concerning Radioactive Materials and Other Sources of Radiation (also known as the Texas Radiation Control Act); §401.011, concerning Radiation Control Agency, which authorizes the commission to regulate and license the disposal of radioactive substances, the processing or storage of low-level radioactive waste or naturally occurring radioactive material, the recovery or processing of source material, and the processing of by-product material; §401.051, concerning Adoption of Rules and Guidelines, which authorizes the commission to adopt rules and guidelines relating to control of sources of radiation; §401.103, concerning Rules and Guidelines for Licensing and Registration, which authorizes the commission to adopt rules and guidelines that provide for licensing and registration for the control of sources of radiation; §401.104, concerning Licensing and Registration rules, which requires the commission to provide rules for licensing for the disposal of radioactive substances; §401.202, concerning Regulation of Low-Level Radioactive Waste Disposal, which authorizes the commission to regulate commercial processing and disposal of low-level radioactive waste; §401.262, concerning Management of Certain By-Product Material, which provides the commission authority to regulate by-product storage and processing facilities; and §401.412, concerning Commission Licensing Authority, which authorizes the commission to issue licenses for the disposal of radioactive substances.

The adopted amendment implements the Texas Health and Safety Code, as amended by SB 1604, 80th Legislature, 2007, §§401.011, 401.051, 401.103, 401.104, 401.151, 401.202, 401.262, 401.2625, and 401.412.

**§336.105. Schedule of Fees for Other Licenses.**

(a) Each application for a license under Subchapter F of this chapter (relating to Licensing of Alternative Methods of Disposal of Radioactive Material), Subchapter G of this chapter (relating to Decommissioning Standards), Subchapter K of this chapter (relating to Commercial Disposal of Naturally Occurring Radioactive Material Waste from Public Water Systems), Subchapter L of this chapter (relating to Licensing of Source Material Recovery and By-product Material Disposal Facilities), or Subchapter M of this chapter (relating to Licensing of Radioactive Substances Processing and Storage Facilities) must be accompanied by an application fee as follows:

(1) facilities regulated under Subchapter F of this chapter: \$50,000;

(2) facilities regulated under Subchapter G of this chapter: \$10,000;

(3) facilities regulated under Subchapter K of this chapter: \$50,000;

(4) facilities regulated under Subchapter L of this chapter: \$463,096 for conventional mining; \$322,633 for in situ mining; \$325,910 for heap leach; and \$374,729 for disposal only; or

(5) facilities regulated under Subchapter M of this chapter: \$3,830 for Waste Processing - Class I Exempt; \$39,959 for Waste Processing - Class I; \$94,661 for Waste Processing - Class II; and \$273,800 for Waste Processing - Class III.

(b) An annual license fee shall be paid for each license issued under Subchapter F, Subchapter G, Subchapter K, Subchapter L, and Subchapter M of this chapter. The amount of each annual fee is as follows:

(1) facilities regulated under Subchapter F of this chapter: \$25,000;

(2) facilities regulated under Subchapter G of this chapter: \$8,400;

(3) facilities regulated under Subchapter K of this chapter: \$25,000;

(4) facilities regulated under Subchapter L of this chapter that are operational:  
\$60,929.50;

(5) facilities regulated under Subchapter L of this chapter that are in closure: \$60,929.50;

(6) facilities regulated under Subchapter L of this chapter that are in post-closure:  
\$52,011.50 for conventional mining; \$26,006 for in situ mining; and \$52,011.50 for disposal only;

(7) facilities regulated under Subchapter L of this chapter, if additional noncontiguous source material recovery facility sites are authorized under the same license, the annual fee shall be increased by 25% for each additional site and 50% for sites in closure;

(8) facilities regulated under Subchapter L of this chapter, if an authorization for disposal of by-product material is added to a license, the annual fee shall be increased by 25%;

(9) facilities regulated under Subchapter L of this chapter, the following one-time fees apply if added after an environmental assessment has been completed on a facility:

(A) \$28,658 for in situ wellfield on noncontiguous property;

(B) \$71,651 for in situ satellite;

(C) \$11,235 for wellfield on contiguous property;

(D) \$50,756 for non-vacuum dryer; or

(E) \$71, 651 for disposal (including processing, if applicable) of by-product material; or

(10) facilities regulated under Subchapter M of this chapter: \$3,830 for Waste Processing - Class I Exempt; \$39,959 for Waste Processing-Class I; \$94,661 for Waste Processing-Class II; and \$273,800 for Waste Processing-Class III.

(c) An application for a major amendment of a license issued under Subchapter F, Subchapter G, or Subchapter K of this chapter must be accompanied by an application fee of \$10,000.

(d) An application for renewal of a license issued under Subchapter F or Subchapter K of this chapter must be accompanied by an application fee of \$35,000.

(e) Upon permanent cessation of all disposal activities and approval of the final decommissioning plan, holders of licenses issued under Subchapter F or Subchapter K of this chapter shall use the applicable fee schedule for subsections (b) and (c) of this section.

(f) For an application to dispose of by-product material that was filed with the Texas Department of State Health Services on or before January 1, 2007, the commission may assess and collect additional fees from the applicant to recover costs. Recoverable costs include costs incurred by the commission for administrative review, technical review, and hearings associated with the application. The executive director shall send an invoice for the amount of the costs incurred during the period September 1 through August 31 of each year. Payment shall be made within 30 days following the date of the invoice.

(g) If a licensee remitted a biennial licensing fee to the Texas Department of State Health Services during the one year period prior to June 17, 2007, the licensee is not subject to an annual fee

under subsection (b) of this section until the expiration of the second year for which the biennial fee was paid.

## **SUBCHAPTER C: GENERAL LICENSING REQUIREMENTS**

### **§§336.201, 336.203, 336.207, 336.211, 336.213**

#### STATUTORY AUTHORITY

The amendments are adopted under Texas Water Code, §5.103, concerning Rules, and §5.105, concerning General Policy, which authorize the commission to adopt rules necessary to carry out its powers and duties under the Texas Water Code and other laws of the state. The amendments are also adopted under Texas Health and Safety Code, Chapter 401, concerning Radioactive Materials and Other Sources of Radiation (also known as the Texas Radiation Control Act); §401.011, concerning Radiation Control Agency, which authorizes the commission to regulate and license the disposal of radioactive substances, the processing or storage of low-level radioactive waste or naturally occurring radioactive material, the recovery or processing of source material, and the processing of by-product material; §401.051, concerning Adoption of Rules and Guidelines, which authorizes the commission to adopt rules and guidelines relating to control of sources of radiation; §401.103, concerning Rules and Guidelines for Licensing and Registration, which authorizes the commission to adopt rules and guidelines that provide for licensing and registration for the control of sources of radiation; §401.104, concerning Licensing and Registration rules, which requires the commission to provide rules for licensing for the disposal of radioactive substances; §401.202, concerning Regulation of Low-Level Radioactive Waste Disposal, which authorizes the commission to regulate commercial processing and disposal of low-level radioactive waste; §401.262, concerning Management of Certain By-Product Material, which provides the commission authority to regulate by-product storage and processing facilities; and §401.412, concerning Commission Licensing Authority, which authorizes the commission to issue licenses for the disposal of radioactive substances.

The adopted amendments implement the Texas Health and Safety Code, as amended by SB 1604, 80th Legislature, 2007, §§401.011, 401.051, 401.103, 401.104, 401.151, 401.202, 401.262, 401.2625, and 401.412.

**§336.201. Purpose and Scope.**

This subchapter establishes general licensing requirements for all radioactive materials, except oil and gas naturally occurring radioactive material waste.

**§336.203. License Required.**

No person shall dispose of radioactive material unless that person has a license from the Texas Commission on Environmental Quality, or an exemption under Texas Health and Safety Code, §401.106(a).

**§336.207. General Requirements for Issuance of a License.**

An application may be approved if the commission determines that the requirements set forth in the applicable subchapter of this chapter and Chapter 305, Subchapter C of this title (relating to Application for Permit) have been met and that:

(1) the applicant is qualified by training and experience to conduct the proposed radioactive material activities in accordance with the rules in this chapter in such a manner as to protect and minimize danger to the public health and safety and the environment;

(2) the applicant's proposed equipment, facilities, and procedures are adequate to protect and minimize danger to the public health and safety and the environment;

(3) the issuance of the license will not be inimical to public health and safety nor have a long-term detrimental impact on the environment.

(4) the applicant for a license issued under Subchapter H of this chapter (relating to Licensing Requirements for Near-Surface Land Disposal of Low-Level Radioactive Waste) has acquired the title to and any interest in land and buildings, including the surface and mineral estates, on which the facility or facilities are to be located by either having acquired:

(A) an undivided ownership of the buildings, surface estate, and mineral estate in fee simple through purchase or completed condemnation; or

(B) an undivided ownership of the buildings and surface estate, along with an exemption, granted by the commission in accordance with federal law for use of a surface use agreement, in lieu of acquiring fee simple title to the mineral estate; and

(5) if applicable, the applicant has demonstrated financial capability to conduct the proposed activity, including all costs associated with decommissioning, decontamination, disposal, reclamation, and any long-term care and surveillance.

**§336.211. General Requirements for Radioactive Material Disposal.**

(a) Unless otherwise exempted, a licensee may dispose of licensed material, as appropriate to the type of licensed material, only:

(1) by transfer to an authorized recipient as provided in §336.331(g) and (h) of this title (relating to Transfer of Radioactive Material), Subchapter H of this chapter (relating to Licensing Requirements for Near-Surface Land Disposal of Low-Level Radioactive Waste), or in Subchapter L of this chapter (relating to Licensing of Source Material Recovery and By-product Material Disposal Facilities);

(2) by transfer to a recipient authorized in another state by license issued by the United States Nuclear Regulatory Commission or an Agreement State or to the United States Department of Energy;

(3) by decay in storage as authorized by law;

(4) by release in effluents within the limits specified in §336.313 of this title (relating to Dose Limits for Individual Members of the Public);

(5) as authorized under §336.213 of this title (relating to Method of Obtaining Approval of Proposed Disposal Procedures);

(6) as authorized under §336.215 of this title (relating to Disposal by Release into Sanitary Sewerage);

(7) as authorized under §336.223 of this title (relating to Disposal in Underground Injection Control Class I Injection Wells);

(8) as authorized under §336.225 of this title (relating to Disposal of Specific Wastes); or

(9) as specifically authorized by commission license issued under this chapter.

(b) A person must be specifically licensed to receive waste containing licensed material from other persons for:

(1) treatment prior to disposal;

(2) treatment by incineration;

(3) decay in storage;

(4) disposal at a land disposal facility; or

(5) disposal by injection in an underground injection control Class I injection well.

(c) Except as provided in subsection (d) of this section, the processing and storage of radioactive material received from other persons is subject to Subchapter M of this chapter (relating to Licensing of Radioactive Substances Processing and Storage Facilities).

(d) The receipt, storage, and/or processing of radioactive materials received at a licensed commercial radioactive material disposal facility for the explicit purpose of disposal at that facility shall be regulated in accordance with the license authorizing disposal under this chapter.

(e) The on-site disposal of low-level radioactive waste is prohibited, except as provided by this section. The commission may, on request or its own initiative, authorize on-site disposal of low-level radioactive waste on a specific basis at any facility at which licensed low-level radioactive waste disposal operations began before September 1, 1989, if, after evaluation of the specific characteristics of the waste, the disposal site, and the method of disposal, the commission finds that the continuation of the disposal activity will not constitute a significant risk to public health and safety and to the environment. Persons subject to this subsection shall be licensed under Subchapter F of this chapter (relating to Licensing of Alternative Methods of Disposal of Radioactive Material).

(f) The disposal of low-level radioactive waste received from other persons is prohibited, except by a person who is specifically licensed under Subchapter H of this chapter.

**§336.213. Method of Obtaining Approval of Proposed Activities.**

(a) A person who plans to dispose of radioactive material; store or process radioactive substances from other persons; or recover or process source material shall submit an application for a license according to Chapter 305 of this title (relating to Consolidated Permits) and the applicable subchapter in this chapter.

(b) A person holding a license issued under this chapter shall request changes to the license by requesting a license amendment, according to Chapter 305, Subchapter D of this title (relating to Amendments, Renewals, Transfers, Corrections, Revocation, and Suspension of Permits).

(c) If this chapter does not specifically authorize a proposed disposal procedure, a person shall file an application for a license or license amendment under Subchapter F of this chapter (relating to Licensing of Alternative Methods of Disposal of Radioactive Material) for approval of on-site disposal of radioactive material generated in the person's activities.

## **SUBCHAPTER G: DECOMMISSIONING STANDARDS**

### **§§336.601, 336.613, 336.619**

#### STATUTORY AUTHORITY

The amendments are adopted under Texas Water Code, §5.103, concerning Rules, and §5.105, concerning General Policy, which authorize the commission to adopt rules necessary to carry out its powers and duties under the Texas Water Code and other laws of the state. The amendments are also adopted under Texas Health and Safety Code, Chapter 401, concerning Radioactive Materials and Other Sources of Radiation (also known as the Texas Radiation Control Act); §401.011, concerning Radiation Control Agency, which authorizes the commission to regulate and license the disposal of radioactive substances, the processing or storage of low-level radioactive waste or naturally occurring radioactive material, the recovery or processing of source material, and the processing of by-product material; §401.051, concerning Adoption of Rules and Guidelines, which authorizes the commission to adopt rules and guidelines relating to control of sources of radiation; §401.103, concerning Rules and Guidelines for Licensing and Registration, which authorizes the commission to adopt rules and guidelines that provide for licensing and registration for the control of sources of radiation; §401.104, concerning Licensing and Registration rules, which requires the commission to provide rules for licensing for the disposal of radioactive substances; §401.202, concerning Regulation of Low-Level Radioactive Waste Disposal, which authorizes the commission to regulate commercial processing and disposal of low-level radioactive waste; §401.262, concerning Management of Certain By-Product Material, which provides the commission authority to regulate by-product storage and processing facilities; and §401.412, concerning Commission Licensing Authority, which authorizes the commission to issue licenses for the disposal of radioactive substances.

The adopted amendments implement the Texas Health and Safety Code, as amended by SB 1604, 80th Legislature, 2007, §§401.011, 401.051, 401.103, 401.104, 401.151, 401.202, 401.262, 401.2625, and 401.412.

**§336.601. Applicability.**

(a) The criteria in this subchapter apply to the decommissioning of facilities regulated under Subchapter F of this chapter (relating to Licensing of Alternative Methods of Disposal of Radioactive Material), the inactive disposal sites regulated under this subchapter, the ancillary surface facilities that support low-level radioactive waste disposal activities at facilities licensed under Subchapter H of this chapter (relating to Licensing Requirements for Near-Surface Land Disposal of Low-Level Radioactive Waste) , naturally occurring radioactive material waste disposal facilities licensed under Subchapter K of this chapter (relating to Commercial Disposal of Naturally Occurring Radioactive Material Waste from Public Water Systems), and to radioactive substances processing and storage facilities licensed under Subchapter M of this chapter (relating to Licensing of Radioactive Substances Processing and Storage Facilities).

(b) This subchapter also establishes the criteria under which a facility may be licensed for decommissioning.

(c) After a site has been decommissioned and the license terminated in accordance with the criteria in this subchapter, the commission may require additional cleanup only if, based on new

information, it determines that the criteria of this subchapter have not been met and residual radioactivity remaining at the site could result in significant threat to public health and safety.

(d) When calculating the total effective dose equivalent (TEDE) to the average member of the critical group, the licensee shall determine the peak annual TEDE expected within the first 1,000 years after decommissioning.

**§336.613. Additional Requirements.**

(a) The requirements of this section do not apply to licenses issued under Subchapter H of this chapter (relating to Licensing Requirements for Near-Surface Land Disposal of Low-Level Radioactive Waste).

(b) A decommissioning plan shall be submitted with the license application required by §336.615 of this title (relating to Inactive Disposal Sites) and §336.1211 of this title (relating to Filing Application for a Special License). Holders of licenses of inactive disposal sites shall submit a decommissioning plan with the renewal application. Holders of licenses of active disposal sites shall submit a decommissioning plan no later than the date specified in §336.625(e)(2) of this title (relating to Expiration and Termination of Licenses).

(c) The executive director may approve an alternate schedule for submittal of a decommissioning plan required under §336.625(e)(2) of this title if the executive director determines that:

(1) the alternative schedule is necessary for the effective conduct of decommissioning operations; and

(2) presents no undue risk from radiation to the public health and safety and is otherwise in the public interest.

(d) A licensee shall request a license amendment to amend a decommissioning plan if revised procedures could increase potential health and safety impacts to workers or to the public. Examples of procedures that require a license amendment include, but are not limited to:

(1) procedures that involve techniques not applied routinely during cleanup or maintenance operations;

(2) workers entering areas not normally occupied where surface contamination and radiation levels are significantly higher than routinely encountered during operation;

(3) procedures that could result in significantly greater airborne concentrations of radioactive materials than are present during operation; or

(4) procedures that could result in significantly greater releases of radioactive material to the environment than those associated with operation.

(e) Procedures with potential health and safety impacts, such as those listed in subsection (d) of this section, may not be carried out prior to approval by the commission of the decommissioning plan.

(f) The proposed decommissioning plan for the site or separate building or outdoor area shall include:

(1) a description of the conditions of the site or separate building or outdoor area sufficient to evaluate the acceptability of the plan;

(2) a description of planned decommissioning activities;

(3) a description of methods used to ensure protection of workers and the environment against radiation hazards during decommissioning;

(4) a description of the planned final radiation survey;

(5) an updated detailed cost estimate for decommissioning, comparison of that estimate with present funds set aside for decommissioning, and a plan for assuring the availability of adequate funds for completion of decommissioning;

(6) for decommissioning plans calling for completion of decommissioning later than 24 months after plan approval, a justification for the delay based on the criteria in subsection (h) of this section; and

(7) a description of the quality assurance/quality control program.

(g) The proposed decommissioning plan may be approved by the commission by license amendment if the information demonstrates that the decommissioning will be completed as soon as practicable and that the health and safety of workers and the public will be protected.

(h) Except as provided in subsection (j) of this section, the licensee shall complete decommissioning of the site or separate building or outdoor area as soon as practicable but no later than 24 months following the initiation of decommissioning.

(i) Except as provided in subsection (j) of this section, when decommissioning involves the entire site, the licensee shall request license termination as the final step in decommissioning, which shall be as soon as practicable but no later than 24 months following the initiation of decommissioning.

(j) The commission may approve by license amendment a request for an alternate schedule for completion of decommissioning of the site or separate building or outdoor area, and license termination if appropriate, if the commission determines that the alternative is warranted by consideration of the following:

(1) whether it is technically feasible to complete decommissioning within the allotted 24-month period;

(2) whether sufficient waste disposal capacity is available to allow completion of decommissioning within the allotted 24-month period;

(3) whether a significant volume reduction in wastes requiring disposal will be achieved by allowing short-lived radionuclides to decay;

(4) whether a significant reduction in radiation exposure to workers can be achieved by allowing short-lived radionuclides to decay; and

(5) other site-specific factors which the commission may consider appropriate on a case-by-case basis, such as the regulatory requirements of other government agencies, lawsuits, groundwater treatment activities, monitored natural groundwater restoration, actions that could result in more environmental harm than deferred cleanup, and other factors beyond the control of the licensee.

(k) As the final steps in decommissioning, the licensee shall:

(1) certify the disposition of all licensed material, including accumulated wastes;

(2) conduct a radiation survey of the premises where the licensed activities were carried out and submit a report of the results of this survey unless the licensee demonstrates that the premises are suitable for release in some other commission approved manner. The licensee shall, as appropriate:

(A) report levels of gamma radiation in units of microroentgens (millisieverts) per hour at 1 meter from surfaces, and report levels of radioactivity (removable and fixed), including alpha and beta, in units of disintegrations per minute or microcuries (megabecquerels) per 100 square centimeters for surfaces, microcuries (megabecquerels) per milliliter for water, and picocuries (becquerels) per gram for solids such as soils or concrete; and

(B) specify the survey instrument(s) used and certify that each instrument is properly calibrated and tested; and

(3) submit a request for license termination, which includes, but is not limited to, the information required by paragraphs (1) and (2) of this subsection.

(l) The executive director may require the licensee to provide any other information necessary to demonstrate that the facilities and land are suitable for release.

**§336.619. Financial Assurance for Decommissioning.**

(a) A financial assurance mechanism or combination of mechanisms in accordance with Chapter 37 of this title (relating to Financial Assurance) is required for all entities currently licensed or proposed to be licensed, except that licenses and applicants under Subchapter M are subject to the financial assurance requirements of §336.1235 of this title (relating to Financial Assurance for Storage and Processing Facilities).

(b) Applicants for a new license to decommission an inactive disposal site and applicants for a license under Subchapters K of this chapter (relating to Commercial Disposal of Naturally Occurring Radioactive Material Waste from Public Water Systems) shall submit with the application a signed statement regarding how the applicant will provide financial assurance for decommissioning using one or more of the mechanisms specified in Chapter 37 of this title. The amount of financial assurance shall be based upon the detailed cost estimate included in the decommissioning plan submitted with the application.

(c) Holders of licenses for inactive disposal sites issued before January 1, 1998 shall submit a funding plan before January 1, 1998. Each funding plan must contain:

(1) a cost estimate for decommissioning;

(A) Each holder of a license authorizing the disposal of unsealed radioactive material with a half-life greater than 120 days and in quantities exceeding 105 times the applicable quantities set forth in §336.627 of this title (relating to Radionuclide Quantities for Use in Determining Financial Assurance for Decommissioning) or when a combination of isotopes is involved if  $R$  divided by 105 is greater than 1 (unity rule), where  $R$  is defined as the sum of the ratios of the quantity of each isotope to the applicable value in §336.627 of this title, shall submit a certification of financial assurance for decommissioning in an amount at least equal to \$750,000, in accordance with the criteria set forth in this subchapter and Chapter 37 of this title; or

(B) Each holder of a license authorizing disposal of radioactive material with a half-life greater than 120 days shall provide certification of financial assurance for decommissioning based on the quantity of material as follows:

(i) \$750,000--greater than 104 but less than or equal to 105 times the applicable quantities in §336.627 of this title, in unsealed form. (For a combination of isotopes, if R, as defined in subparagraph (A) of this paragraph, divided by 104 is greater than 1 but R divided by 105 is less than or equal to 1.); or

(ii) \$150,000--greater than 103 but less than or equal to 104 times the applicable quantities in §336.627 of this title in unsealed form. (For a combination of isotopes, if R, as defined in subparagraph (A) of this paragraph, divided by 103 is greater than 1 but R divided by 104 is less than or equal to 1.).

(C) Notwithstanding the requirements of subparagraphs (A) and (B) of this paragraph:

(i) each holder for a license authorizing the disposal of more than 100 millicuries of source material in a readily dispersible form shall submit certification that financial assurance has been provided in the amount of \$750,000;

(ii) each holder for a license authorizing the disposal of quantities of source material greater than ten millicuries but less than or equal to 100 millicuries in a readily dispersible form shall submit certification that financial assurance has been provided in the amount of \$150,000;

(2) a description of the financial assurance mechanism of assuring funds for decommissioning as specified in Chapter 37 of this title, including means for adjusting cost estimates and associated funding levels annually over the life of the facility; and

(3) a certification by the licensee that a signed original of the financial assurance mechanism for decommissioning, in accordance with criteria set forth in this section and Chapter 37 of this title, has been submitted to and approved by the executive director in the amount specified in paragraph (1) of this subsection.

(d) Holders of existing licenses for inactive disposal sites shall, as part of the license renewal process, submit a signed statement adjusting the amount of financial assurance based upon the detailed cost estimate included in the decommissioning plan submitted with the renewal application. The adjusted amount of financial assurance for decommissioning shall be effective upon license renewal.

(e) Holders of licenses for active disposal sites shall submit a signed statement adjusting the amount of financial assurance based upon the detailed cost estimate included in the decommissioning plan submitted no later than the date specified in §336.625(e) of this title (relating to Expiration and Termination of Licenses).

**SUBCHAPTER L: LICENSING OF SOURCE MATERIAL RECOVERY AND BY-PRODUCT  
MATERIAL DISPOSAL FACILITIES**

**§§336.1101, 336.1103, 336.1105, 336.1107, 336.1109, 336.1111, 336.1113, 336.1115, 336.1117,  
336.1119, 336.1121, 336.1123, 336.1125, 336.1127, 336.1129, 336.1131, 336.1133, 336.1135**

STATUTORY AUTHORITY

The new sections are adopted under Texas Water Code, §5.103, concerning Rules, and §5.105, concerning General Policy, which authorize the commission to adopt rules necessary to carry out its powers and duties under the Texas Water Code and other laws of the state. The new sections are also adopted under Texas Health and Safety Code, Chapter 401, concerning Radioactive Materials and Other Sources of Radiation (also known as the Texas Radiation Control Act); §401.011, concerning Radiation Control Agency, which authorizes the commission to regulate and license the disposal of radioactive substances, the processing or storage of low-level radioactive waste or naturally occurring radioactive material, the recovery or processing of source material, and the processing of by-product material; §401.051, concerning Adoption of Rules and Guidelines, which authorizes the commission to adopt rules and guidelines relating to control of sources of radiation; §401.103, concerning Rules and Guidelines for Licensing and Registration, which authorizes the commission to adopt rules and guidelines that provide for licensing and registration for the control of sources of radiation; §401.104, concerning Licensing and Registration rules, which requires the commission to provide rules for licensing for the disposal of radioactive substances; §401.202, concerning Regulation of Low-Level Radioactive Waste Disposal, which authorizes the commission to regulate commercial processing and disposal of low-level radioactive waste; §401.262, concerning Management of Certain By-Product Material, which provides the commission authority to regulate by-product storage and processing facilities; and §401.412, concerning

Commission Licensing Authority, which authorizes the commission to issue licenses for the disposal of radioactive substances.

The adopted new sections implement the Texas Health and Safety Code, as amended by SB 1604, 80th Legislature, 2007, §§401.011, 401.051, 401.103, 401.104, 401.151, 401.202, 401.262, 401.2625, and 401.412.

**§336.1101. Purpose.**

This subchapter provides for the specific licensing of the receipt, possession, use, or disposal of radioactive material in source material recovery facilities and other operations that accept by-product material for disposal. No person may engage in such activities except as authorized in a specific license issued in accordance with this subchapter.

**§336.1103. Scope.**

In addition to the requirements of this subchapter, all licensees, unless otherwise specified, are subject to the requirements of Subchapters A - E of this chapter.

**§336.1105. Definitions.**

The following words and terms, when used in this subchapter, have the following meanings, unless the context clearly indicates otherwise.

(1) **Aquifer**--A geologic formation, group of formations, or part of a formation capable of yielding a significant amount of groundwater to wells or springs. Any saturated zone created by uranium or thorium recovery operations would not be considered an aquifer unless the zone is or potentially is:

(A) hydraulically interconnected to a natural aquifer;

(B) capable of discharge to surface water; or

(C) reasonably accessible because of migration beyond the vertical projection of the boundary of the land transferred for long-term government ownership and care in accordance with §336.1131 of this title (relating to Land Ownership of By-Product Material Disposal Sites).

(2) **As expeditiously as practicable considering technological feasibility**--As quickly as possible considering the physical characteristics of the by-product material and the site, the limits of "available technology" (as defined in this section), the need for consistency with mandatory requirements of other regulatory programs, and "factors beyond the control of the licensee" (as defined in this section). The phrase permits consideration of the cost of compliance only to the extent specifically provided for by use of the term "Available technology."

(3) **Available technology**--Technologies and methods for emplacing a final radon barrier on by-product material piles or impoundments. This term must not be construed to include extraordinary

measures or techniques that would impose costs that are grossly excessive as measured by practice within the industry (or one that is reasonably analogous), (for example, by way of illustration only, unreasonable overtime, staffing, or transportation requirements, etc., considering normal practice in the industry; laser fusion of soils; etc.), provided there is reasonable progress toward emplacement of the final radon barrier. To determine grossly excessive costs, the relevant baseline against which costs must be compared is the cost estimate for tailings impoundment closure contained in the licensee's approved reclamation plan, but costs beyond these estimates shall not automatically be considered grossly excessive.

(4) **By-product material**--Tailings or wastes produced by or resulting from the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content, including discrete surface wastes resulting from uranium solution extraction processes. Underground ore bodies depleted by such solution extraction operations do not constitute "by-product material" within this definition.

(5) **Capable fault**--As used in this section, "Capable fault" has the same meaning as defined in Section III(g) of Appendix A of Title 10 Code of Federal Regulations (CFR) Part 100.

(6) **Closure**--The post-operational activities to decontaminate and decommission the buildings and site used to produce by-product materials and reclaim the tailings or disposal area, including groundwater restoration, if needed.

(7) **Closure plan**--The plan approved by the agency to accomplish closure. The closure plan consists of a decommissioning plan and may also include a reclamation plan.

(8) **Commencement of construction**--Any clearing of land, excavation, or other substantial action that would adversely affect the environment of a site, but does not include changes desirable for the temporary use of the land for public recreational uses, necessary borings to determine site characteristics or other preconstruction monitoring to establish background information related to the suitability of a site, or to the protection of the environment.

(9) **Compliance period**--The period of time that begins when the agency sets secondary groundwater protection standards and ends when the owner or operator's license is terminated and the site is transferred to the state or federal government for long-term care, if applicable.

(10) **Dike**--An embankment or ridge of either natural or man-made materials used to prevent the movement of liquids, sludges, solids, or other materials.

(11) **Disposal area**--The area containing by-product materials to which the requirements of §336.1129(p) - (aa) of this title (relating to Technical Requirements) apply.

(12) **Existing portion**--As used in §336.1129(i)(1) of this title, "existing portion" is that land surface area of an existing surface impoundment on which significant quantities of uranium or thorium by-product materials had been placed prior to September 30, 1983.

(13) **Factors beyond the control of the licensee**--Factors proximately causing delay in meeting the schedule in the applicable reclamation plan for the timely emplacement of the final radon

barrier notwithstanding the good faith efforts of the licensee to complete the barrier in compliance with §336.1129(x) of this title. These factors may include but are not limited to:

(A) physical conditions at the site;

(B) inclement weather or climatic conditions;

(C) an act of God;

(D) an act of war;

(E) a judicial or administrative order or decision, or change to the statutory, regulatory, or other legal requirements applicable to the licensee's facility that would preclude or delay the performance of activities required for compliance;

(F) labor disturbances;

(G) any modifications, cessation or delay ordered by state, federal, or local agencies;

(H) delays beyond the time reasonably required in obtaining necessary government permits, licenses, approvals, or consent for activities described in the reclamation plan proposed by the licensee that result from government agency failure to take final action after the licensee

has made a good faith, timely effort to submit legally sufficient applications, responses to requests (including relevant data requested by the agencies), or other information, including approval of the reclamation plan; and

(I) an act or omission of any third party over whom the licensee has no control.

(14) **Final radon barrier**--The earthen cover (or approved alternative cover) over by-product material constructed to comply with §336.1129(p) - (aa) of this title (excluding erosion protection features).

(15) **Groundwater**--Water below the land surface in a zone of saturation. For purposes of this subchapter, groundwater is the water contained within an aquifer as defined in this section.

(16) **Hazardous constituent**--Subject to §336.1129(j)(5) of this title, "hazardous constituent" is a constituent that meets all three of the following tests:

(A) the constituent is reasonably expected to be in or derived from the by-product material in the disposal area;

(B) the constituent has been detected in the groundwater in the uppermost aquifer; and

(C) the constituent is listed in 10 Code of Federal Regulations Part 40, Appendix A, Criterion 13.

(17) **Leachate**--Any liquid, including any suspended or dissolved components in the liquid, that has percolated through or drained from the by-product material.

(18) **Licensed site**--The area contained within the boundary of a location under the control of persons generating or storing by-product materials under a license.

(19) **Liner**--A continuous layer of natural or man-made materials, beneath or on the sides of a surface impoundment that restricts the downward or lateral escape of by-product material, hazardous constituents, or leachate.

(20) **Maximum credible earthquake**--That earthquake that would cause the maximum vibratory ground motion based upon an evaluation of earthquake potential considering the regional and local geology and seismology and specific characteristics of local subsurface material.

(21) **Milestone**--An action or event that is required to occur by an enforceable date.

(22) **Operation**--The period of time during which a by-product material disposal area is being used for the continued placement of by-product material or is in standby status for such placement. A disposal area is in operation from the day that by-product material is first placed in it until the day final closure begins.

(23) **Point of compliance**--The site-specific location in the uppermost aquifer where the groundwater protection standard shall be met. The objective in selecting the point of compliance is to provide the earliest practicable warning that an impoundment is releasing hazardous constituents to the groundwater. The point of compliance is selected to provide prompt indication of groundwater contamination on the hydraulically downgradient edge of the disposal area.

(24) **Principal activities**--Activities authorized by the license that are essential to achieving the purpose(s) for which the license is issued or amended. Storage during which no licensed material is accessed for use or disposal and activities incidental to decontamination or decommissioning are not principal activities.

(25) **Reclamation plan**--For the purposes of §336.1129(p) - (aa) of this title, "reclamation plan" is the plan detailing activities to accomplish reclamation of the by-product material disposal area in accordance with the technical criteria of this section. The reclamation plan shall include a schedule for reclamation milestones that are key to the completion of the final radon barrier, including as appropriate, but not limited to, windblown tailings retrieval and placement on the pile, interim stabilization (including dewatering or the removal of freestanding liquids and recontouring), and final radon barrier construction. Reclamation of by-product material shall also be addressed in the closure plan. The detailed reclamation plan may be incorporated into the closure plan.

(26) **Security** --This term has the same meaning as financial assurance.

(27) **Surface impoundment**--A natural topographic depression, man-made excavation, or diked area, which is designed to hold an accumulation of liquid wastes or wastes containing free liquids, and which is not an injection well.

(28) **Unrefined and unprocessed ore**--Ore in its natural form before any processing, such as grinding, roasting, beneficiating, or refining.

(29) **Uppermost aquifer**--The geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary.

(30) **Uranium recovery**--Any uranium extraction or concentration activity that results in the production of "by-product material" as it is defined in this chapter. As used in this definition, "Uranium recovery" has the same meaning as "uranium milling" in 10 Code of Federal Regulations §40.4.

#### **§336.1107. Filing Application for Specific Licenses.**

Unless otherwise specified, an applicant for a license is subject to the requirements in §336.205 of this title (relating to Application Requirements). The applicant shall also comply with the following additional filing requirements.

(1) Applications for specific licenses shall be filed in seven copies in a manner specified by the agency.

(2) Each applicant shall demonstrate to the agency that the applicant is financially qualified to conduct the licensed activity, including any required decontamination, decommissioning, reclamation, and disposal, before the agency issues or renews a license by posting security as required under §336.1125 of this title (relating to Financial Security Requirements).

(3) An application for a license shall contain written specifications relating to the source material recovery facility operations and the disposition of the by-product material.

(4) Each application shall clearly demonstrate how the requirements of §§336.1107, 336.1109, 336.1111, 336.1113, 336.1125, 336.1127, 336.1129, and 336.1131 of this title (relating to Filing Application for Specific Licenses; General Requirements for the Issuance of Specific Licenses; Special Requirements for a License Application for Source Material Recovery and By-Product Material Disposal Facilities; Specific Terms and Conditions of Licenses; Financial Security Requirements; Long-Term Care and Maintenance Requirements; Technical Requirements; and Land Ownership of By-Product Material Disposal Sites) have been addressed.

(5) Applications for new licenses shall be processed in accordance with Chapter 281 of this title (relating to Applications Processing).

**§336.1109. General Requirements for the Issuance of Specific Licenses.**

A license application may be approved if the agency determines that the applicant has met the requirements of §336.207 of this title (relating to General Requirements for Issuance of a License) and the following:

(1) qualifications of the designated radiation safety officer (RSO) are adequate for the purpose requested in the application and include as a minimum:

(A) have earned at least a bachelor's degree in a physical or biological science, industrial hygiene, health physics, radiation protection, or engineering from an accredited college or university, or an equivalent combination of training and relevant experience, with two years of relevant experience equivalent to a year of academic study, from a uranium or mineral extraction/recovery, radioactive waste processing, or a radioactive waste or by-product material disposal facility;

(B) have at least one year of relevant experience, in addition to that used to meet the educational requirement, working under the direct supervision of the radiation safety officer at a uranium or mineral extraction/recovery, radioactive waste processing, or radioactive waste or by-product material disposal facility; and

(C) have at least four weeks of specialized training in health physics or radiation safety applicable to uranium or mineral extraction/recovery, radioactive waste processing, or radioactive waste or by-product material disposal operations from a course provider that has been evaluated and approved by the agency; and

(2) the applicant satisfies all applicable special requirements in this subchapter.

**§336.1111. Special Requirements for a License Application for Source Material Recovery and By-product Material Disposal Facilities.**

In addition to the requirements in §336.1109 of this title (relating to General Requirements for the Issuance of Specific Licenses), a license may be issued if the applicant submits the items in paragraph (1) of this section for agency approval and meets the conditions in paragraphs (2) and (3) of this section.

(1) An application for a license must include the following:

(A) for new licenses, an environmental report that includes the results of a one-year preoperational monitoring program and for renewal of licenses, an environmental report containing the results of the operational monitoring program. Both must also include the following:

(i) description of the proposed project or action;

(ii) area/site characteristics including ecology, geology, topography, hydrology, meteorology, historical and cultural landmarks, and archaeology;

(iii) radiological and nonradiological impacts of the proposed project or action, including waterway and groundwater impacts and any long-term impacts;

(iv) environmental effects of accidents;

(v) by-product material disposal, decommissioning, decontamination, and reclamation and impacts of these activities; and

(vi) site and project alternative;

(B) a closure plan for decontamination, decommissioning, restoration, and reclamation of buildings and the site to levels that would allow unrestricted use and for reclamation of the by-product material disposal areas in accordance with the technical requirements of §336.1129 of this title (relating to Technical Requirements);

(C) proposal of an acceptable form and amount of financial security consistent with the requirements of §336.1125 of this title (relating to Financial Security Requirements);

(D) procedures describing the means employed to meet the requirements of §336.1113(1) and (2) of this title (relating to Specific Terms and Conditions of Licenses) and §336.1129(o) of this title during the operational phase of any project;

(E) specifications for the emissions control and disposition of the by-product material; and

(F) for disposal of by-product material received from others, information on the chemical and radioactive characteristics of the wastes to be received, detailed procedures for receiving and documenting incoming waste shipments, and detailed waste acceptance criteria.

(G) an adequate operating, radiation safety, and emergency procedures manual;  
and

(H) a signed certification from the owner or owners of the real property on which radioactive substances are recovered, stored, processed, or disposed acknowledging that:

(i) radioactive substances are recovered, stored, processed or disposed on the property with the consent of the property owner or owners; and

(ii) decommissioning of the licensed site may be required even if the applicant or licensee is unable or fails to decommission the licensed site as required by a license, rule or order of the commission.

(2) Except as provided in this section, the applicant shall not commence construction at the site until the agency has issued the license. Commencement of construction prior to issuance of the license shall be grounds for denial of a license. For an application for a new license to dispose of by-product material that was filed with the Texas Department of State Health Services on or before January 1, 2007, the applicant may commence construction as provided in §336.1135 of this title (relating to Construction Activities), at the applicant's own risk, upon the executive director's issuance of the

Environmental Analysis provided under §281.21(f) of this title (relating to Draft Permit, Technical Summary, Fact Sheet, and Compliance History).

(3) An application for a license must be submitted according to the applicable requirements of the Texas Engineering Practice Act, the Texas Geoscience Practice Act, and the Professional Land Surveying Practices Act.

**§336.1113. Specific Terms and Conditions of Licenses.**

Unless otherwise specified, each license issued in accordance with this section is subject to the requirements of §305.125 of this title (relating to Standard Permit Conditions) and the following.

(1) Daily inspection of any by-product material retention systems shall be conducted by the licensee. General qualifications for individuals conducting inspections shall be approved by the agency. Records of the inspections shall be maintained for review by the agency.

(2) In addition to the applicable requirements of §336.350 and §336.352 of this title (relating to Reports of Stolen, Lost, or Missing Licensed Radioactive Material and Reports of Exposures, Radiation Levels, and Concentrations of Radioactive Material Exceeding the Limits), the licensee shall immediately notify the agency of the following:

(A) any failure in a by-product material retention system that results in a release of by-product material into unrestricted areas;

(B) any release of radioactive material that exceeds the concentrations for water listed in Table II, Column 2, of §336.359 of this title (relating to Appendix B. Annual Limits in Intake (ALI) and Derived Air Concentrations (DAC) of Radionuclides for Occupational Exposure; Effluent Concentrations; Concentrations for Release to Sanitary Sewerage) and that extends beyond the licensed boundary;

(C) any spill that exceeds 20,000 gallons and that exceeds the concentrations for water listed in Table II, Column 2, of §336.359 of this title; or

(D) any release of solids that exceeds the limits in §336.1115(e) of this title (relating to Expiration and Termination of Licenses; Decommissioning of Sites, Separate Buildings or Outdoor Areas) and that extends beyond the licensed boundary.

(3) In addition to the applicable requirements of Chapter 327 of this title (relating to Spill Prevention and Control) and §336.350 and §336.352 of this title, the licensee shall notify the agency within 24 hours of the following:

(A) any spill that extends:

(i) beyond the wellfield monitor well ring;

(ii) more than 400 feet from an injection or production well pipe artery to or from a recovery plant; or

(iii) more than 200 feet from a recovery plant; or

(B) any spill that exceeds 2,000 gallons and that exceeds the concentrations for water listed in Table II, Column 2, of §336.359 of this title.

(4) At any time before termination of the license, the licensee shall submit written statements under oath upon request of the commission or executive director to enable the commission to determine whether or not the license should be modified, suspended, or revoked.

(5) The licensee shall be subject to the applicable provisions of Texas Health and Safety Code, Chapter 401, also known as the Texas Radiation Control Act (TRCA) now or hereafter in effect and to applicable rules and orders of the commission. The terms and conditions of the license are subject to amendment, revision, or modification, by reason of amendments to TRCA or by reason of rules and orders issued in accordance with terms of TRCA.

(6) Any 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 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 TRCA or the license or of any rule or order of the commission.

(7) Each person licensed by the commission under this subchapter shall confine possession and use of radioactive materials to the locations and purposes authorized in the license.

(8) No by-product may be disposed of until the executive director has inspected the facility and has found it to be conformance with the description, design, and construction described in the application for a by-product disposal license. No by-product may be received for disposal at the facility until the executive director has approved financial assurance.

(9) The commission may incorporate in any license at the time of issuance, or thereafter, by appropriate rule or order, additional requirements or conditions with respect to the licensee's receipt, possession, or disposal of by-product as it deems appropriate or necessary in order to:

(A) protect the health and safety of the public and the environment; or

(B) require reports and recordkeeping and to provide for inspections of activities under the licenses that may be necessary or appropriate to effectuate the purposes of TRCA and rules thereunder.

**§336.1115. Expiration and Termination of Licenses; Decommissioning of Sites, Separate Buildings or Outdoor Areas.**

(a) The term of the specific license is for a fixed term not to exceed ten years.

(b) Expiration of the specific license does not relieve the licensee of the requirements of this chapter.

(c) All license provisions continue in effect beyond the expiration date with respect to possession of radioactive material until the agency notifies the former licensee in writing that the provisions of the license are no longer binding. During this time, the former licensee must:

(1) be limited to actions involving radioactive material that are related to decommissioning; and

(2) continue to control entry to restricted areas until the location(s) is suitable for release for unrestricted use in accordance with the requirements of subsection (e) of this section.

(d) Within 60 days of the occurrence of any of the following, each licensee must provide notification to the agency in writing and either begin decommissioning its site, or any separate buildings or outdoor areas that contain residual radioactivity in accordance with the closure plan in §336.1111(1)(B) of this title (relating to Special Requirements for a License Application for Source

Material Recovery and By-Product Material Disposal Facilities), so that the buildings or outdoor areas are suitable for release in accordance with subsection (e) of this section if:

(1) the license has expired in accordance with subsection (a) of this section; or

(2) the licensee has decided to permanently cease principal activities, as defined in §336.1105(24) of this title (relating to Definitions), at the entire site or in any separate building or outdoor area; or

(3) no principal activities have been conducted for a period of 24 months in any building or outdoor area that contains residual radioactivity such that the building or outdoor area is unsuitable for release in accordance with agency requirements.

(e) Outdoor areas are considered suitable for release for unrestricted use if the following limits are not exceeded.

(1) The concentration of radium-226 or radium-228 (in the case of thorium by-product material) in soil, averaged over any 100 square meters ( $m^2$ ), may not exceed the background level by more than:

(A) 5 picocuries per gram (pCi/g) (0.185 becquerel per gram (Bq/g)), averaged over the first 15 cm of soil below the surface; and

(B) 15 pCi/g (0.555 Bq/g), averaged over 15 cm thick layers of soil more than 15 cm below the surface.

(2) The contamination of vegetation may not exceed 5 pCi/g (0.185 Bq/g), based on dry weight, for radium-226 or radium-228.

(3) The concentration of natural uranium in soil, with no daughters present, averaged over any 100 m<sup>2</sup>, may not exceed the background level by more than:

(A) 30 pCi/g (1.11 Bq/g), averaged over the top 15 cm of soil below the surface;

and

(B) 150 pCi/g (5.55 Bq/g), average concentration at depths greater than 15 centimeters below the surface ; and

(4) no individual member of the public will receive an effective dose equivalent in excess of 100 mrem (1 mSv) per year as calculated by the methodology provided in NUREG-1620, Appendix H - "Guidance to the U.S. Nuclear Regulatory Commission Staff on the Radium Dose Approach."

(f) Coincident with the notification required by subsection (c) of this section, the licensee shall maintain in effect all decommissioning financial security established by the licensee in accordance with §336.1125 of this title (relating to Financial Security Requirements) in conjunction with a license issuance or renewal or as required by this section. The amount of the financial security must be increased,

or may be decreased, as appropriate, with agency approval, to cover the detailed cost estimate for decommissioning established in accordance with subsection (l)(5) of this section.

(g) In addition to the provisions of subsection (h) of this section, each licensee must submit an updated closure plan to the agency within 12 months of the notification required by subsection (d) of this section. The updated closure plan must meet the requirements of §336.1111(1)(B) and §336.1125 of this title. The updated closure plan must describe the actual conditions of the facilities and site and the proposed closure activities and procedures.

(h) The agency may grant a request to delay or postpone initiation of the decommissioning process if the agency determines that such relief is not detrimental to the occupational and public health and safety and is otherwise in the public interest. The request must be submitted no later than 30 days before notification in accordance with subsection (d) of this section. The schedule for decommissioning in subsection (d) of this section may not begin until the agency has made a determination on the request.

(i) A decommissioning plan must be submitted if required by license condition or if the procedures and activities necessary to carry out decommissioning of the site or separate building or outdoor area have not been previously approved by the agency and these procedures could increase potential health and safety impacts to workers or to the public, such as in any of the following cases:

(1) procedures would involve techniques not applied routinely during cleanup or maintenance operations;

(2) workers would be entering areas not normally occupied where surface contamination and radiation levels are significantly higher than routinely encountered during operation;

(3) procedures could result in significantly greater airborne concentrations of radioactive materials than are present during operation; or

(4) procedures could result in significantly greater releases of radioactive material to the environment than those associated with operation.

(j) The agency may approve an alternate schedule for submittal of a decommissioning plan required in accordance with subsection (d) of this section if the agency determines that the alternative schedule is necessary to the effective conduct of decommissioning operations and presents no undue risk from radiation to the occupational and public health and safety and is otherwise in the public interest.

(k) The procedures listed in subsection (i) of this section may not be carried out prior to approval of the decommissioning plan.

(l) The proposed decommissioning plan for the site or separate building or outdoor area must include:

(1) a description of the conditions of the site, separate buildings, or outdoor area sufficient to evaluate the acceptability of the plan;

(2) a description of planned decommissioning activities;

(3) a description of methods used to ensure protection of workers and the environment against radiation hazards during decommissioning;

(4) a description of the planned final radiation survey;

(5) an updated detailed cost estimate for decommissioning, comparison of that estimate with present funds set aside for decommissioning, and a plan for assuring the availability of adequate decommissioning; and

(6) for decommissioning plans calling for completion of decommissioning later than 24 months after plan approval, a justification for the delay based on the criteria in subsection (p) of this section.

(m) The proposed decommissioning plan may be approved by the agency if the information in the plan demonstrates that the decommissioning will be completed as soon as practicable and that the occupational health and safety of workers and the public will be adequately protected.

(n) Except as provided subsection (p) of this section, licensees shall complete decommissioning of the site or separate building or outdoor area as soon as practicable but no later than 24 months following the initiation of decommissioning.

(o) Except as provided in subsection (p) of this section, when decommissioning involves the entire site, the licensee must request license termination as soon as practicable but no later than 24 months following the initiation of decommissioning.

(p) The agency may approve a request for an alternate schedule for completion of decommissioning of the site or separate buildings or outdoor areas and the license termination if appropriate, if the agency determines that the alternative is warranted by the consideration of the following:

(1) whether it is technically feasible to complete decommissioning within the allotted 24-month period;

(2) whether sufficient waste disposal capacity is available to allow completion of decommissioning within the allotted 24-month period; and

(3) other site-specific factors that the agency may consider appropriate on a case-by-case basis, such as the regulatory requirements of other government agencies, lawsuits, groundwater treatment activities, monitored natural groundwater restoration, actions that could result in more environmental harm than deferred cleanup, and other factors beyond the control of the licensee.

(q) As the final step in decommissioning, the licensee must:

(1) certify the disposition of all radioactive material, including accumulated by-product material;

(2) conduct a radiation survey of the premises where the licensed activities were carried out and submit a report of the results of this survey unless the licensee demonstrates that the premises are suitable for release in accordance with subsection (e) of this section. The licensee shall, as appropriate:

(A) report the following levels:

(i) gamma radiation in units of microrentgen per hour ( $\mu\text{R/hr}$ ) (millisieverts per hour ( $\text{mSv/hr}$ )) at 1 meter (m) from surfaces;

(ii) radioactivity, including alpha and beta, in units of disintegrations per minute (dpm) or microcuries ( $\mu\text{Ci}$ ) (megabecquerels (MBq)) per 100 square centimeters ( $\text{cm}^2$ ) for surfaces;

(iii)  $\mu\text{Ci}$  (MBq) per milliliter for water; and

(iv) picocuries (pCi) (becquerels (Bq)) per gram (g) for solids such as soils or concrete; and

(B) specify the manufacturer's name, and model and serial number of survey instrument(s) used and certify that each instrument is properly calibrated and tested.

(r) The executive director will provide written notification to specific licensees, including former licensees with license provisions continued in effect beyond the expiration date in accordance with subsection (d) of this section, that the provisions of the license are no longer binding. The executive director will provide such notification when the executive director determines that:

(1) radioactive material has been properly disposed;

(2) reasonable effort has been made to eliminate residual radioactive contamination, if present;

(3) a radiation survey has been performed that demonstrates that the premises are suitable for release in accordance with agency requirements;

(4) other information submitted by the licensee is sufficient to demonstrate that the premises are suitable for release in accordance with the requirements of subsection (e) of this section;

(5) all records required by §336.343 of this title (relating to Records of Surveys) have been submitted to the agency;

(6) the licensee has paid any outstanding fees required by this chapter and has resolved any outstanding notice(s) of violation issued to the licensee;

(7) the licensee has met the applicable technical and other requirements for closure and reclamation of a by-product material disposal site; and

(8) the United States Nuclear Regulatory Commission (NRC) has made a determination that all applicable standards and requirements have been met.

(s) Licenses for source material recovery or by-product material disposal are exempt from subsections (d)(3), (g), and (h) of this section with respect to reclamation of by-product material impoundments or disposal areas. Timely reclamation plans for by-product material disposal areas must be submitted and approved in accordance with §336.1129(p) - (aa) of this title (relating to Technical Requirements).

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

**§336.1117. Renewal of Licenses.**

(a) Application for a renewal of specific licenses must be filed in accordance with §336.1107 of this title (relating to Filing Application for Specific Licenses) and §336.1111(1) of this title (relating to Special Requirements for a License Application for Source Material Recovery and By-Product Material Disposal Facilities). Application for a renewal of a specific license must be filed by the date specified in the license. If the licensee fails to apply for a renewal and fails to pay the fee required by Subchapter B of this chapter, the license expires and the licensee must comply with the requirements of §336.1115 of this title (relating to Expiration and Termination of Licenses; Decommissioning of Sites, Separate Buildings, or Outdoor Areas). In any application for renewal, the applicant may incorporate drawings by clear and specific reference (for example, title, date and unique number of drawing), if no modifications have been made since previously submitted.

(b) In any case in which a licensee, prior to expiration of the existing license, has filed a request in proper form for a renewal or for a new license authorizing the same activities, such existing license will not expire until the application has been finally determined by the agency. In any case in which a licensee, not more than 30 days after the expiration of an existing license, has filed an application for renewal or for a new license authorizing the same activities and paid the fee required by Subchapter B of this chapter, the agency may reinstate the license and extend the expiration until the request has been finally determined by the agency.

(c) An application for renewal of a license may be approved if the agency determines that the requirements of §336.1109 of this title (relating to General Requirements for the Issuance of Specific Licenses) have been satisfied.

**§336.1119. Amendment of Licenses at Request of Licensee.**

Requests for amendment of a license shall be filed in accordance with §336.1107 of this title (relating to Filing Application for Specific Licenses) and §336.205 of this title (relating to Application Requirements). Such requests shall be signed by the radiation safety officer and specify how the licensee desires the license to be amended and the basis for such amendment.

**§336.1121. Agency Action on Applications to Renew or Amend.**

In considering a request by a licensee to renew or amend a license, the agency will apply the appropriate criteria in §336.1109 of this title (relating to General Requirements for the Issuance of Specific Licenses) and §336.1111 of this title (relating to Special Requirements for a License Application for Source Material Recovery and By-Product Material Disposal Facilities).

**§336.1123. Transfer of Material.**

(a) A licensee may not transfer radioactive material except as authorized in accordance with this chapter.

(b) Except as otherwise provided in a license and subject to the provisions of subsections (c) and (d) of this section, any licensee may transfer radioactive material:

(1) to the agency after receiving prior approval from the agency;

(2) to the United States Department of Energy;

(3) to any person exempt from the licensing requirements of the Texas Radiation Control Act and these requirements or exempt from the licensing requirements of the United States Nuclear Regulatory Commission (NRC) or an agreement state, to the extent permitted by these exemptions;

(4) to any person authorized to receive such material in accordance with terms of a general license or its equivalent, a specific license or equivalent licensing document issued by the agency, NRC, any agreement state, any licensing state, or to any person otherwise authorized to receive such material by the federal government or any agency of the federal government, or the agency;

(5) to any person abroad pursuant to an export license issued under Title 10, Chapter 1, Code of Federal Regulations Part 110; or

(6) as otherwise authorized by the agency in writing.

(c) Before transferring radioactive material to a specific licensee of the agency, NRC, an agreement state, a licensing state, or to a general licensee who is required to register with the agency, the

licensee transferring the radioactive material shall verify that the transferee's license authorizes the receipt of the type, form, and quantity of radioactive material to be transferred.

(d) The following methods for the verification of subsection (c) of this section are acceptable:

(1) the transferor may possess and have read a current copy of the transferee's specific license or registration certificate;

(2) the transferor may possess a written certification by the transferee that the transferee is authorized by the license or certificate of registration to receive the type, form, and quantity of radioactive material to be transferred, specifying the license or registration certificate number, issuing agency, and expiration date;

(3) for emergency shipments, the transferor may accept oral certification by the transferee that the transferee is authorized by license or registration certificate to receive the type, form, and quantity of radioactive material to be transferred, specifying the license or registration certificate number, issuing agency, and expiration date, provided that the oral certification is confirmed in writing within ten days; or

(4) when none of the methods of verification described in paragraphs (1) - (3) of this subsection are readily available or when a transferor desires to verify that information received by one of these methods is correct or up-to-date, the transferor may obtain and record confirmation from the agency, or the NRC, that the transferee is licensed to receive the radioactive material.

(e) Preparation for shipment and transport of radioactive material shall be in accordance with the provisions of §336.332 of this title (relating to Preparation of Radioactive Material for Transport).

**§336.1125. Financial Security Requirements.**

(a) Financial security for decontamination, decommissioning, reclamation, restoration, disposal, and any other requirements of the agency shall be established by each licensee 60 days prior to the receipt or possession of radioactive substances to assure that sufficient funds will be available to carry out the decontamination and decommissioning of buildings and the site and for the reclamation of any by-product material disposal areas. The amount of funds to be ensured by such security arrangements shall be based on agency-approved cost estimates in an agency-approved closure plan for:

(1) decontamination and decommissioning of buildings and the site to levels that allow unrestricted use of these areas upon decommissioning; and

(2) the reclamation of by-product material disposal areas in accordance with technical criteria delineated in §336.1129 of this title (relating to Technical Requirements).

(b) The licensee shall submit this closure plan in conjunction with an environmental report that addresses the expected environmental impacts of the licensee's operation, decommissioning and reclamation, and evaluates alternatives for mitigating these impacts.

(c) The security shall also cover the payment of the charge for long-term surveillance and control for by-product material disposal areas required by §336.1127(c) of this title (relating to Long-Term Care and Maintenance Requirements).

(d) A licensee or applicant must establish financial assurance under the requirements of 25 TAC Chapter 289 (relating to Radiation Control).

**§336.1127. Long-term Care and Maintenance Requirements.**

(a) Unless otherwise provided by the agency, each licensee licensed in accordance with this part for disposal of by-product material shall make payments into the Perpetual Care Account in amounts specified by the agency. The agency shall make such determinations on a case-by-case basis.

(b) The final disposition of by-product material should be such that the need for ongoing active maintenance is eliminated to the maximum extent practicable.

(c) A minimum charge of \$250,000 (1978 dollars) or more, if determined by the agency, must be paid into the Perpetual Care Account to cover the costs of long-term care and maintenance. The total charge must be paid prior to the termination of a license. With agency approval, the charge may be paid in installments. The total or unpaid portion of the charge must be covered during the term of the license by additional security meeting the requirements of §336.1125 of this title (relating to Financial Security Requirements). If site surveillance, control, or maintenance requirements at a particular site are determined, on the basis of a site-specific evaluation, to be significantly greater (for example, if fencing

or monitoring is determined to be necessary), the agency may specify a higher charge. The total charge must be such that, with an assumed 2.0% annual real interest rate, the collected funds will yield interest in an amount sufficient to cover the annual costs of site care, surveillance, and where necessary, maintenance. Prior to actual payment, the total charge will be adjusted annually for inflation. The inflation rate to be used is that indicated by the change in the Consumer Price Index published by the United States Department of Labor, Bureau of Labor Statistics.

(d) The requirements of this section apply only to those sites whose ownership is subject to being transferred to the state or the federal government. The total amount of funds collected by the agency in accordance with this section must be transferred to the federal government if title and custody of the by-product material disposal site is transferred to the federal government upon termination of the license.

**§336.1129. Technical Requirements.**

(a) By-product material handling and disposal systems must be designed to accommodate full-capacity production over the lifetime of the facility. When later expansion of systems or operations may be likely, capability of the disposal system to be modified to accommodate increased quantities without degradation in long-term stability and other performance factors must be evaluated.

(b) In selecting among alternative by-product material disposal sites or judging the adequacy of existing sites, the following site features which would assure meeting the broad objective of isolating the tailings and associated contaminants without ongoing active maintenance must be considered:

(1) remoteness from populated areas;

(2) hydrogeologic and other environmental conditions conducive to continued immobilization and isolation of contaminants from usable groundwater sources; and

(3) potential for minimizing erosion, disturbance, and dispersion by natural forces over the long term.

(c) The site selection process must be an optimization to the maximum extent reasonably achievable in terms of these site features.

(d) In the selection of disposal sites, primary emphasis must be given to isolation of the by-product material, a matter having long-term impacts, as opposed to consideration only of short-term convenience or benefits (e.g., minimization of transportation of land acquisition costs). While isolation of by-product material will also be a function of both site and engineering design, overriding consideration must be given to siting features.

(e) By-product material should be disposed of in a manner such that no active maintenance is required to preserve conditions of the site.

(f) The applicant's environmental report must evaluate alternative sites and disposal methods and shall consider disposal of by-product material by placement below grade. Where full below grade burial is not practicable, the size of retention structures, and size and steepness of slopes associated with exposed

embankments must be minimized by excavation to the maximum extent reasonably achievable or appropriate given the geologic and hydrologic conditions at a site. In these cases, it must be demonstrated that an above grade disposal program will provide reasonably equivalent isolation of the by-product material from natural erosional forces.

(g) To avoid proliferation of small waste disposal sites and thereby reduce perpetual surveillance obligations, by-product material from in situ extraction operations, such as residues from solution evaporation or contaminated control processes, and wastes from small remote above ground extraction operations must be disposed of at existing large mill tailings disposal sites; unless, considering the nature of the wastes, such as their volume and specific activity, and the costs and environmental impacts of transporting the wastes to a large disposal site, such offsite disposal is demonstrated to be impracticable or the advantages of onsite burial clearly outweigh the benefits of reducing the perpetual surveillance obligations.

(h) The following site and design requirements must be adhered to whether by-product material is disposed of above or below grade:

(1) the upstream rainfall catchment areas must be minimized to decrease erosion potential by flooding that could erode or wash out sections of the by-product material disposal area;

(2) the topographic features must provide good wind protection;

(3) the embankment and cover slopes must be relatively flat after final stabilization to minimize erosion potential and to provide conservative factors of safety assuring long term stability. The objective should be to contour final slopes to grades that are as close as possible to those that would be provided if by-product material was disposed of below grade. Slopes must not be steeper than 5 horizontal to 1 vertical (5h:1v), except as specifically authorized by the agency. Where steeper slopes are proposed, reasons why a slope steeper than 5h:1v would be as equally resistant to erosion shall be provided, and compensating factors and conditions that make such slopes acceptable shall be identified;

(4) a full self-sustaining vegetative cover must be established or rock cover employed to reduce wind and water erosion to negligible levels;

(5) where a full vegetative cover is not likely to be self-sustaining due to climatic conditions, such as in semi-arid and arid regions, rock cover shall be employed on slopes of the impoundment system. The agency may consider relaxing this requirement for extremely gentle slopes, such as those that may exist on the top of the pile;

(6) the following factors must be considered in establishing the final rock cover design to avoid displacement of rock particles by human and animal traffic or by natural processes, and to preclude undercutting and piping:

(A) shape, size, composition, gradation of rock particles (excepting bedding material, average particles size must be at least cobble size or greater);

(B) rock cover thickness and zoning of particles by size; and

(C) steepness of underlying slopes.

(7) individual rock fragments must be dense, sound, and resistant to abrasion, and shall be free from cracks, seams, and other defects that would tend to unduly increase their destruction by erosion and weathering action. Local rock materials are permissible provided the characteristics under local climatic conditions indicate similar long-term performance as a protective layer. Weak, friable, or laminated aggregate may not be used;

(8) rock covering of slopes may not be required where top covers are very thick (on the order of 10 m or greater); impoundment slopes are very gentle (on the order of 10h:1v or less); bulk cover materials have inherently favorable erosion resistance characteristics; there is negligible drainage catchment area upstream of the pile; and there is good wind protection;

(9) all impoundment surfaces must be contoured to avoid areas of concentrated surface runoff or abrupt or sharp changes in slope gradient. In addition to rock cover on slopes, areas toward which surface runoff might be directed must be well protected with substantial rock cover (riprap). In addition to providing for stability of the impoundment system itself, overall stability, erosion potential, and geomorphology of surrounding terrain must be evaluated to assure that there are no ongoing or potential processes, such as gully erosion, which would lead to impoundment instability;

(10) the impoundment must not be located near a capable fault that could cause a maximum credible earthquake larger than that which the impoundment could reasonably be expected to withstand; and

(11) the impoundment should be designed to incorporate features that will promote deposition. Design features that promote deposition of sediment suspended in any runoff which flows into the impoundment area might be utilized. The object of such a design feature would be to enhance the thickness of cover over time.

(i) The following groundwater protection requirements and those in subsections (j) and (k) of this section and §336.1133 of this title (relating to Maximum Values for Use in Groundwater Protection) apply during operations and until closure is completed. Groundwater monitoring to comply with these standards is required by subsections (bb) and (cc) of this section.

(1) The primary groundwater protection standard is a design standard for surface impoundments used to manage uranium or thorium by-product material. Unless exempted under subsection (i)(3) of this section, surface impoundments (except for an existing portion) must have a liner that is designed, constructed, and installed to prevent any migration of wastes out of the impoundment to the adjacent subsurface soil, groundwater, or surface water at any time during the active life (including the closure period) of the impoundment. If the liner is constructed of materials that may allow wastes to migrate into the liner during the active life of the facility, impoundment closure shall include removal or decontamination of all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate. For

impoundments that will be closed with the liner material left in place, the liner must be constructed of materials that can prevent wastes from migrating into the liner during the active life of the facility.

(2) The liner required by paragraph (1) of this subsection must be:

(A) constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;

(B) placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression, or uplift; and

(C) installed to cover all surrounding earth likely to be in contact with the wastes or leachate.

(3) The applicant or licensee may be exempted from the requirements of paragraph (1) of this subsection if the agency finds, based on a demonstration by the applicant or licensee, that alternate design and operating practices, including the closure plan, together with site characteristics will prevent the migration of any hazardous constituents into groundwater or surface water at any future time. In deciding whether to grant an exemption, the agency will consider:

(A) the nature and quantity of the wastes;

(B) the proposed alternate design and operation;

(C) the hydrogeologic setting of the facility, including the attenuative capacity and thickness of the liners and soils present between the impoundment and groundwater or surface water; and

(D) all other factors that would influence the quality and mobility of the leachate produced and the potential for it to migrate to groundwater or surface water.

(4) A surface impoundment must be designed, constructed, maintained, and operated to prevent overtopping resulting from normal or abnormal operations, overfilling, wind and wave actions, rainfall, or run-off; from malfunctions of level controllers, alarms, and other equipment; and from human error.

(5) When dikes are used to form the surface impoundment, the dikes must be designed, constructed, and maintained with sufficient structural integrity to prevent massive failure of the dikes. In ensuring structural integrity, it must not be presumed that the liner system will function without leakage during the active life of the impoundment.

(j) By-product materials must be managed to conform to the following secondary groundwater protection requirements.

(1) Hazardous constituents, as defined in §336.1105(16) of this title (relating to Definitions), entering the groundwater from a licensed site must not exceed the specified concentration limits in the uppermost aquifer beyond the point of compliance during the compliance period.

(2) Specified concentration limits are those limits established by the agency as indicated in paragraph (7) of this subsection.

(3) The agency will also establish the point of compliance and compliance period on a site-specific basis through license conditions and orders.

(4) When the detection monitoring established under subsections (bb) and (cc) of this section indicates leakage of hazardous constituents from the disposal area, the agency will perform the following:

(A) identify hazardous constituents;

(B) establish concentration limits;

(C) set the compliance period; and

(D) may adjust the point of compliance if needed in accordance with developed data and site information regarding the flow of groundwater or contaminants.

(5) Even when constituents meet all three tests in the definition of hazardous constituent, the agency may exclude a detected constituent from the set of hazardous constituents on a site-specific basis if it finds that the constituent is not capable of posing a substantial present or potential hazard to human health or the environment. In deciding whether to exclude constituents, the agency will consider the following:

(A) potential adverse effects on groundwater quality, considering the following:

(i) physical and chemical characteristics of the waste in the licensed site, including its potential for migration;

(ii) hydrogeological characteristics of the licensed site and surrounding land;

(iii) quantity of groundwater and the direction of groundwater flow;

(iv) proximity of groundwater users and groundwater withdrawal rates;

(v) current and future uses of groundwater in the area;

(vi) existing quality of groundwater, including other sources of contamination and cumulative impact on the groundwater quality;

(vii) potential for human health risks caused by human exposure to waste constituents;

(viii) potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

(ix) persistence and permanence of potential adverse effects; and

(B) potential adverse effects on quality of hydraulically-connected surface water, considering the:

(i) volume and physical and chemical characteristics of the by-product material in the licensed site;

(ii) hydrogeological characteristics of the licensed site and surrounding land;

(iii) quantity and quality of groundwater and the direction of groundwater flow;

(iv) patterns of rainfall in the region;

(v) proximity of the licensed site to surface waters;

(vi) current and future uses of surface waters in the area and any water quality standards established for those surface waters;

(vii) existing quality of surface water, including potential impacts from other sources of contamination and the cumulative impact on surface water quality;

(viii) potential for human health risks caused by human exposure to waste constituents;

(ix) potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

(x) persistence and permanence of the potential adverse effects.

(6) In making any determinations under paragraphs (5) and (8) of this subsection about the use of groundwater in the area around the facility, the agency will consider any identification of underground sources of drinking water and exempted aquifers made by the United States Environmental Protection Agency (EPA) and the commission under Chapter 331 of this title.

(7) At the point of compliance, the concentration of a hazardous constituent may not exceed the following:

(A) the agency approved background concentration in the groundwater of the constituents listed in 10 Code of Federal Regulations (CFR) 40, Appendix A, Criterion 13;

(B) the respective value given in §336.1133 of this title if the constituent is listed in the table and if the background level of the constituent is below the value listed; or

(C) an alternate concentration limit established by the agency.

(8) Alternate concentration limits to background concentration or to the drinking water limits in §336.1133 of this title that present no significant hazard may be proposed by licensees for agency consideration. Licensees must provide the basis for any proposed limits including consideration of practicable corrective actions, evidence that limits are as low as reasonably achievable, and information on the factors the agency shall consider. The agency may establish a site-specific alternate concentration limit for a hazardous constituent, as provided in paragraph (7) of this subsection, if it finds that the proposed limit is as low as reasonably achievable, after considering practicable corrective actions, and that the constituent will not pose a substantial present or potential hazard to human health or the environment as long as the alternate concentration limit is not exceeded. In making the present and potential hazard finding, the agency will consider the factors listed in paragraph (4) of this subsection.

(k) If the groundwater protection standards established under subsection (i) of this section are exceeded at a licensed site, a corrective action program must be put into operation as soon as is practicable, and in no event later than 18 months after the agency finds that the standards have been

exceeded. The licensee must submit the proposed corrective action program and supporting rationale for executive director approval prior to putting the program into operation, unless otherwise directed by the executive director. The licensee's proposed program must address removing or treating in place any hazardous constituents that exceed concentration limits in groundwater between the point of compliance and downgradient licensed site boundary. The licensee must continue corrective action measures to the extent necessary to achieve and maintain compliance with the groundwater protection standard. The executive director will determine when the licensee may terminate corrective action measures based on data from the groundwater monitoring program and other information that provides reasonable assurance that the groundwater protection standard will not be exceeded.

(l) In developing and conducting groundwater protection programs, applicants and licensees must also consider the following:

(1) installation of bottom liners. Where synthetic liners are used, a leakage-detection system must be installed immediately below the liner to ensure detection of any major failures. This is in addition to the groundwater monitoring program conducted as provided in subsection (cc) of this section. Where clay liners are proposed or relatively thin, in situ clay soils are to be relied upon for seepage control, tests must be conducted with representative tailings solutions and clay materials to confirm that no significant deterioration of permeability or stability properties will occur with continuous exposure of clay to by-product material solutions. Tests must be run for a sufficient period of time to reveal any effects that may occur;

(2) mill process designs that provide the maximum practicable recycle of solutions and conservation of water to reduce the net input of liquid to the by-product material impoundment;

(3) dewatering of by-product material solutions by process devices and/or in situ drainage systems. At new sites, by-product material solutions must be dewatered by a drainage system installed at the bottom of the impoundment to lower the phreatic surface and reduce the driving head of seepage, unless tests show by-product material solutions are not amenable to such a system. Where in situ dewatering is to be conducted, the impoundment bottom must be graded to assure that the drains are at a low point. The drains must be protected by suitable filter materials to assure that drains remain free-running. The drainage system must also be adequately sized to assure good drainage; and

(4) neutralization to promote immobilization of hazardous constituents.

(m) Technical specifications must be prepared for installation of seepage control systems. A quality assurance, testing, and inspection program, which includes supervision by a qualified engineer or scientist, must be established to assure that specifications are met. If adverse groundwater impacts or conditions conducive to adverse groundwater impacts occur due to seepage, action must be taken to alleviate the impacts or conditions and restore groundwater quality to levels consistent with those before operations began. The specific seepage control and groundwater protection method, or combination of methods, to be used must be worked out on a site-specific basis.

(n) In support of a by-product material disposal system proposal, the applicant/licensee must supply the following information:

(1) the chemical and radioactive characteristics of the waste solutions;

(2) the characteristics of the underlying soil and geologic formations particularly as they will control transport of contaminants and solutions. This must include detailed information concerning extent, thickness, uniformity, shape, and orientation of underlying strata. Hydraulic gradients and conductivities of the various formations must be determined. This information must be gathered by borings and field survey methods taken within the proposed impoundment area and in surrounding areas where contaminants might migrate to groundwater. The information gathered on boreholes must include both geologic and geophysical logs in sufficient number and degree of sophistication to allow determining significant discontinuities, fractures, and channeled deposits of high hydraulic conductivity. If field survey methods are used, they should be in addition to and calibrated with borehole logging. Hydrologic parameters such as permeability must not be determined on the basis of laboratory analysis of samples alone. A sufficient amount of field testing (e.g., pump tests) must be conducted to assure actual field properties are adequately understood. Testing must be conducted to make possible estimates of chemisorption attenuation properties of underlying soil and rock; and

(3) location, extent, quality, capacity, and current uses of any groundwater at and near the site.

(o) If ore is stockpiled, methods must be used to minimize penetration of radionuclides and other substances into underlying soils.

(p) In disposing of by-product material, licensees must place an earthen cover over the by-product material at the end of the facility's operations and shall close the waste disposal area in accordance with a design that provides reasonable assurance of control of radiological hazards to the following:

(1) be effective for 1,000 years to the extent reasonably achievable and, in any case, for at least 200 years; and

(2) limit releases of radon-222 from uranium by-product materials and radon-220 from thorium by-product materials to the atmosphere so as not to exceed an average release rate of 20 picocuries per square meter per second ( $\text{pCi}/\text{m}^2\text{s}$ ) to the extent practicable throughout the effective design life determined in accordance with paragraph (1) of this subsection. This average applies to the entire surface of each disposal area over a period of at least one year, but a short period compared to 100 years. Radon will come from both by-product materials and cover materials. Radon emissions from cover materials should be estimated as part of developing a closure plan for each site. The standard, however, applies only to emissions from by-product materials to the atmosphere.

(q) In computing required by-product material cover thicknesses, moisture in soils in excess of amounts found normally in similar soils in similar circumstances may not be considered. Direct gamma exposure from the by-product material should be reduced to background levels. The effects of any thin synthetic layer may not be taken into account in determining the calculated radon exhalation level. Cover may not include materials that contain elevated levels of radium. Soils used for near-surface cover must be essentially the same, as far as radioactivity is concerned, as that of surrounding surface soils. If non-

soil materials are proposed as cover materials, the licensee must demonstrate that such materials will not crack or degrade by differential settlement, weathering, or other mechanisms over the long term.

(r) As soon as reasonably achievable after emplacement of the final cover to limit releases of radon-222 from uranium by-product material and prior to placement of erosion protection barriers of other features necessary for long-term control of the tailings, the licensee must verify through appropriate testing and analysis that the design and construction of the final radon barrier is effective in limiting releases of radon-222 to a level not exceeding  $20\text{pCi/m}^2\text{s}$  averaged over the entire pile or impoundment using the procedures described in Appendix B, method 115 of 40 CFR Part 61, or another method of verification approved by the agency as being at least as effective in demonstrating the effectiveness of the final radon barrier.

(s) When phased emplacement of the final radon barrier is included in the applicable reclamation plan, as defined in §336.1105(25) of this title, the verification of radon-222 release rates required in subsection (dd) of this section must be conducted for each portion of the pile or impoundment as the final radon barrier for that portion is emplaced.

(t) Within 90 days of the completion of all testing and analysis relevant to the required verification in subsection (dd)(3) and (dd)(4) of this section, the uranium recovery licensee must report to the agency the results detailing the actions taken to verify that levels of release of radon-222 do not exceed  $20\text{ pCi/m}^2\text{s}$  when averaged over the entire pile or impoundment. The licensee must maintain records documenting the source of input parameters, including the results of all measurements on which they are based, the calculations and/or analytical methods used to derive values for input parameters, and

the procedure used to determine compliance. These records must be maintained until termination of the license and shall be kept in a form suitable for transfer to the custodial agency at the time of transfer of the site to the state or federal government in accordance with §336.1131 of this title (relating to Land Ownership of By-Product Material Disposal Sites).

(u) Near-surface cover materials may not include waste, rock, or other materials that contain elevated levels of radium. Soils used for near-surface cover must be essentially the same, as far as radioactivity is concerned, as surrounding surface soils. This is to ensure that surface radon exhalation is not significantly above background because of the cover material itself.

(v) The design requirements for longevity and control of radon releases apply to any portion of a licensed and/or disposal site unless such portion contains a concentration of radium in land averaged over areas of 100 square meters ( $m^2$ ), that, as a result of by-product material, does not exceed the background level by more than:

(1) 5 picocuries per gram (pCi/g) of radium-226, or in the case of thorium by-product material, radium-228, averaged over the first 15 centimeters (cm) below the surface; and

(2) 15 pCi/g of radium-226, or in the case of thorium by-product material, radium-228, averaged over 15-cm thick layers more than 15 cm below surface.

(w) The licensee must also address the nonradiological hazards associated with the waste in planning and implementing closure. The licensee must ensure that disposal areas are closed in a manner

that minimizes the need for further maintenance. To the extent necessary to prevent threats to human health and the environment, the licensee shall control, minimize, or eliminate post-closure escape of nonradiological hazardous constituents, leachate, contaminated rainwater, or waste decomposition products to groundwater or surface waters or to the atmosphere.

(x) For impoundments containing uranium by-product materials, the final radon barrier shall be completed as expeditiously as practicable considering technological feasibility after the pile or impoundment ceases operation in accordance with a written reclamation plan, as defined in §336.1105(25) of this title, approved by the agency, by license amendment. (The term "As expeditiously as practicable considering technological feasibility" includes "Factors beyond the control of the licensee.") Deadlines for completion of the final radon barrier and applicable interim milestones shall be established as license conditions. Applicable interim milestones may include, but are not limited to, the retrieval of windblown by-product material and placement on the pile and the interim stabilization of the by-product material (including dewatering or the removal of freestanding liquids and recontouring). The placement of erosion protection barriers or other features necessary for long-term control of the by-product material shall also be completed in a timely manner in accordance with a written reclamation plan approved by the agency by license amendment.

(y) The agency may approve by license amendment a licensee's request to extend the time for performance of milestones related to emplacement of the final radon barrier if, after providing an opportunity for public participation, the agency finds that the licensee has adequately demonstrated in the manner required in subsection (r) of this section that releases of radon-222 do not exceed an average of 20 pCi/m<sup>2</sup>s. If the delay is approved on the basis that the radon releases do not exceed 20 pCi/m<sup>2</sup>s, a

verification of radon levels, as required by subsection (r) of this section, shall be made annually during the period of delay. In addition, once the agency has established the date in the reclamation plan for the milestone for completion of the final radon barrier, the agency may by license amendment extend that date based on cost if, after providing an opportunity for public participation, the agency finds that the licensee is making good faith efforts to emplace the final radon barrier, the delay is consistent with the definition of "Available technology," and the radon releases caused by the delay will not result in a significant incremental risk to the public health.

(z) The agency may authorize by license amendment, upon licensee request, a portion of the impoundment to accept uranium by-product material, or such materials that are similar in physical, chemical, and radiological characteristics to the uranium mill tailings and associated wastes already in the pile or impoundment, from other sources during the closure process. No such authorization will be made if it results in a delay or impediment to emplacement of the final radon barrier over the remainder of the impoundment in a manner that will achieve levels of radon-222 releases not exceeding 20 pCi/m<sup>2</sup>s averaged over the entire impoundment. The verification required in subsection (r) of this section may be completed with a portion of the impoundment being used for further disposal if the agency makes a final finding that the impoundment will continue to achieve a level of radon-222 release not exceeding 20 pCi/m<sup>2</sup>s averaged over the entire impoundment. After the final radon barrier is complete except for the continuing disposal area, only by-product material will be authorized for disposal, and the disposal will be limited to the specified existing disposal area. This authorization by license amendment will only be made after providing opportunity for public participation. Reclamation of the disposal area, as appropriate, must be completed in a timely manner after disposal operations cease in accordance with subsection (p) of this

section. These actions are not required to be complete as part of meeting the deadline for final radon barrier construction.

(aa) The licensee's closure plan must provide reasonable assurance that institutional control will be provided for the length of time found necessary by the agency to ensure the requirements of subsection (p) of this section are met.

(bb) Prior to any major site construction, a preoperational monitoring program must be conducted for one full year to provide complete baseline data on the site and its environs. Throughout the construction and operating phases of the project, an operational monitoring program must be conducted to measure or evaluate compliance with applicable standards and rules; to evaluate performance of control systems and procedures; to evaluate environmental impacts of operation; and to detect potential long-term effects.

(cc) The licensee shall establish a detection monitoring program needed for the agency to set the site-specific groundwater protection standards in subsection (j)(4) of this section. For all monitoring under this paragraph, the licensee or applicant will propose, as license conditions for agency approval, which constituents are to be monitored on a site-specific basis. The data and information must provide a sufficient basis to identify those hazardous constituents that require concentration limit standards and to enable the agency to set the limits for those constituents and compliance period. They may provide the basis for adjustments to the point of compliance. The detection monitoring program must be in place when specified by the agency in orders or license conditions. Once groundwater protection standards have been established in accordance with subsection (j)(4) of this section, the licensee shall establish and

implement a compliance monitoring program. In conjunction with a corrective action program, the licensee shall establish and implement a corrective action monitoring program to demonstrate the effectiveness of the corrective actions. Any monitoring program required by this subsection may be based on existing monitoring programs to the extent the existing programs can meet the stated objective for the program.

(dd) Systems must be designed and operated so that all airborne effluent releases are as low as is reasonably achievable. The primary means of accomplishing this must be by means of emission controls. Institutional controls, such as extending the site boundary and exclusion area, may be employed to ensure that offsite exposure limits are met, but only after all practicable measures have been taken to control emissions at the source.

(1) During operations and prior to closure, radiation doses from radon emissions from surface impoundments of by-product materials must be kept as low as is reasonably achievable.

(2) Checks must be made and logged hourly of all parameters which determine the efficiency of emission control equipment operation. It must be determined whether or not conditions are within a range prescribed to ensure that the equipment is operating consistently near peak efficiency. Corrective action must be taken when performance is outside of prescribed ranges. Effluent control devices must be operative at all times during drying and packaging operations and whenever air is exhausting from the uranium dryer stack. Drying and packaging operations must terminate when controls are inoperative. When checks indicate the equipment is not operating within the range prescribed for peak efficiency, actions must be taken to restore parameters to the prescribed range. When this cannot be done

without shutdown and repairs, drying and packaging operations must cease as soon as practicable.

Operations may not be restarted after cessation due to off-normal performance until needed corrective actions have been identified and implemented. All such cessations, corrective actions, and re-starts must be reported to the executive director in writing within ten days of the subsequent restart.

(3) To control dusting from by-product material, that portion not covered by standing liquids must be wetted or chemically stabilized to prevent or minimize blowing and dusting to the maximum extent reasonably achievable. This requirement may be relaxed if by-product materials are effectively sheltered from wind, as in the case of below-grade disposal. Consideration must be given in planning by-product material disposal programs to methods for phased covering and reclamation of by-product material impoundments. To control dusting from diffuse sources, applicants/licensees must develop written operating procedures specifying the methods of control that will be utilized.

(4) Uranium recovery facility operations producing or involving thorium by-product material must be conducted in such a manner as to provide reasonable assurance that the annual dose equivalent does not exceed 25 millirems (mrem) to the whole body, 75 mrem to the thyroid, and 25 mrem to any other organ of any member of the public as a result of exposures to the planned discharge of radioactive materials to the general environment, radon-220 and its daughters excepted.

(5) By-product materials must be managed so as to conform to the applicable provisions of 40 CFR Part 440, as codified on January 1, 1983.

(ee) Licensees/applicants may propose alternatives to the specific requirements in §336.1125 of this title (relating to Financial Security Requirements), §336.1127 of this title (relating to Long-Term Care and Maintenance Requirements), §336.1129 of this title (relating to Technical Requirements) and §336.1131 of this title (relating to Land Ownership of By-Product Material Disposal Sites). The alternative proposals may take into account local or regional conditions including geology, topography, hydrology, and meteorology.

(ff) The agency may find that the proposed alternatives meet the agency's requirements if the alternatives will achieve a level of stabilization and containment of the sites concerned and a level of protection for the public health and safety and the environment from radiological and nonradiological hazards associated with the sites, which is equivalent to, to the extent practicable, or more stringent than the level that would be achieved by the requirements of §§336.1125, 336.1127, 336.1129 and 336.1131 of this title and the standards promulgated by EPA in 40 CFR Part 192, Subparts D and E.

(gg) All site-specific licensing decisions based on the criteria in §§336.1125, 336.1127, 336.1129 and 336.1131 of this title, or alternatives proposed by licensees or applicants must take into account the risk to the public health and safety and the environment with due consideration to the economic costs involved and any other factors the agency determines to be appropriate.

(hh) Any proposed alternatives to the specific requirements in §§336.1125, 336.1127, 336.1129 and 336.1131 of this title must meet the requirements of 10 CFR §150.31(d).

(ii) No new site may be located in a 100-year floodplain or wetland as defined in "Floodplain Management Guidelines for Implementing Executive Order 11988."

**§336.1131. Land Ownership of By-product Material Disposal Sites.**

(a) These criteria relating to ownership of by-product material and their disposal sites apply to all licenses terminated, issued, or renewed after November 8, 1981.

(b) Unless exempted by the United States Nuclear Regulatory Commission (NRC), title to land (including any affected interests therein) that is used for the disposal of by-product material or that is essential to ensure the long-term stability of the disposal site and title to the by-product material must be transferred to the State of Texas or the United States prior to the termination of the license. Material and land transferred must be transferred without cost to the State of Texas or the United States. In cases where no ongoing site surveillance will be required, surface land ownership transfer requirements may be waived. For licenses issued before November 8, 1981, NRC may take into account the status of the ownership of the land and interests therein, and the ability of a licensee to transfer title and custody thereof to the State.

(c) Any uranium recovery facility license must contain terms and conditions as the agency determines necessary to assure that, prior to termination of the license, the licensee will comply with ownership requirements of this section for sites used for tailings disposal.

(d) For surface impoundments only, the applicant/licensee shall demonstrate a serious effort to obtain severed mineral rights and shall, in the event that fee simple title including all mineral rights cannot be obtained, provide notification in local public land records of the fact that the land is being used for the disposal of radioactive material and is subject to an NRC license prohibiting the disruption and disturbance of the tailings.

(e) If NRC, subsequent to title transfer, determines that use of the surface or subsurface estates, or both, of the land transferred to the state or federal government will not endanger the public health and safety or the environment, NRC may permit the use of the surface or subsurface estates, or both, of such land in a manner consistent with the provisions of this section. If NRC permits the use of such land, it will provide the person who transferred the land with the first refusal with respect to the use of such land.

**§336.1133. Maximum Values for Use in Groundwater Protection.**

The following is a list of the maximum concentration values to be used for groundwater protection.

Figure: 30 TAC §336.1133

Constituent or Property	Maximum (mg/l)	Concentration (pCi/l)
Arsenic	0.05	
Barium	1	
Cadmium	0.01	
Chromium	0.05	
Lead	0.05	
Mercury	0.002	
Selenium	0.01	
Silver	0.05	

Endrin 1,2,3,4,10,10-hexachloro-6, 7- epoxy-1,4,4a,5,6,7,8, 8a-octahydro-endo, endo-1,4:5,8-dimethanonaphthalene	0.0002	
Lindane 1,2,3,4,5, 6-hexachlorocyclohexane	0.004	
Methoxychlor 1,1,1-trichloro-2,2-bis- (p-methoxyphenyl) ethane	0.1	
Toxaphene Chlorinated camphene	0.005	
2,4-D (2,4, 5-Trichlorophenoxy) acetic acid	0.1	
Silvex 2-(2,4,5-Trichlorophenoxy) propionic acid	0.01	
Combined radium-226 and radium-228 Gross alpha-particle activity (excluding radon and uranium when producing uranium by-product material or radon and thorium when producing thorium by-product material)		5     15

**§336.1135. Construction Activities.**

For an application for a new license to dispose of by-product material that was filed with the Texas Department of State Health Services on or before January 1, 2007, an applicant may commence construction activities before issuance of a license, at the applicant’s own risk, under the following conditions:

(1) the applicant has completed preoperational monitoring provided under §336.1129(bb) of this title (relating to Technical Requirements);

(2) the executive director has issued an environmental analysis and final draft license with recommendation to approve the application under §281.21 of this title (relating to Draft Permit, Technical Summary, Fact Sheet, and Compliance History);

(3) the applicant may not receive, store, possess, receive or dispose of by-product material without a license from the commission authorizing the activity;

(4) the agency may inspect and observe the construction activities;

(5) the applicant must cease construction activities when directed by the executive director to do so; and

(6) the commencement of construction activities may not be considered as a factor in determining whether to issue a license.

## **SUBCHAPTER M: LICENSING OF RADIOACTIVE SUBSTANCES**

### **PROCESSING AND STORAGE FACILITIES**

**§§336.1201, 336.1203, 336.1205, 336.1207, 336.1209, 336.1211, 336.1213, 336.1215, 336.1217,  
336.1219, 336.1221, 336.1223, 336.1225, 336.1227, 336.1229, 336.1231, 336.1233, 336.1235**

#### STATUTORY AUTHORITY

The new sections are adopted under Texas Water Code, §5.103, concerning Rules, and §5.105, concerning General Policy, which authorize the commission to adopt rules necessary to carry out its powers and duties under the Texas Water Code and other laws of the state. The new sections are also adopted under Texas Health and Safety Code, Chapter 401, concerning Radioactive Materials and Other Sources of Radiation (also known as the Texas Radiation Control Act); §401.011, concerning Radiation Control Agency, which authorizes the commission to regulate and license the disposal of radioactive substances, the processing or storage of low-level radioactive waste or naturally occurring radioactive material, the recovery or processing of source material, and the processing of by-product material; §401.051, concerning Adoption of Rules and Guidelines, which authorizes the commission to adopt rules and guidelines relating to control of sources of radiation; §401.103, concerning Rules and Guidelines for Licensing and Registration, which authorizes the commission to adopt rules and guidelines that provide for licensing and registration for the control of sources of radiation; §401.104, concerning Licensing and Registration rules, which requires the commission to provide rules for licensing for the disposal of radioactive substances; §401.202, concerning Regulation of Low-Level Radioactive Waste Disposal, which authorizes the commission to regulate commercial processing and disposal of low-level radioactive waste; §401.262, concerning Management of Certain By-Product Material, which provides the commission authority to regulate by-product storage and processing facilities; and §401.412, concerning

Commission Licensing Authority, which authorizes the commission to issue licenses for the disposal of radioactive substances.

The adopted new sections implement the Texas Health and Safety Code, as amended by SB 1604, 80th Legislature, 2007, §§401.011, 401.051, 401.103, 401.104, 401.151, 401.202, 401.262, 401.2625, and 401.412.

**§336.1201. Purpose and Scope.**

(a) This section establishes the requirements for management of commercial radioactive substances processing and storage facilities, the procedures and criteria for the issuance of licenses to receive, possess, transport, store, and process radioactive substances from other persons, and the terms and conditions upon which the agency may issue such licenses.

(b) In addition to the requirements of this subchapter, all licensees, unless otherwise specified, are subject to the requirements of Subchapters A - E and G of this chapter (relating to General Provisions; Radioactive Substance Fees; General Disposal Requirements; Standards for Protection Against Radiation; Notices, Instructions, and Reports to Workers and Inspections; and Decommissioning Standards).

**§336.1203. Definitions.**

The following words and terms, when used in this subchapter, have the following meanings, unless the context clearly indicates otherwise.

(1) **Commencement of major construction**--Any major structural erection or major alterations to existing structures, or other substantial action that would change the facility design or site for the purpose of establishing a radioactive substances processing or storage facility. The term does not mean the acquisition of existing structures or minor changes thereto.

(2) **Decommissioning**--The final activities carried out at a radioactive substances processing or storage site after completion of processing operations to remove safely from service and reduce residual radioactivity to a level that permits release of the property for unrestricted use and/or termination of the license. Such activities must include:

(A) disposing of all radioactive substances at a licensed radioactive waste disposal site;

(B) dismantling or decontaminating site structures;

(C) decontaminating site surfaces and remaining equipment; and

(D) conducting final closure surveys, decontamination, and reclamation of the site.

(3) **Disposal**--Isolation or removal of radioactive substances from mankind and his environment. The term does not include emissions and discharges under rules of the agency.

(4) **Engineered barriers**--Man-made devices to contain or limit the potential movement of radioactive material, which might result from spills or other accidents.

(5) **Floodplain**--The lowland and relatively flat areas adjoining inland and coastal waters, including flood prone areas of off-shore islands.

(6) **Local government**--A county, an incorporated city or town, a special district, or other political subdivision of the state.

(7) **Major aquifer**--An aquifer that yields large quantities of water in a comparatively large area of the state. Major aquifers are located in the following formations: Ogallala, Alluvium and Bolson Deposits, Edwards-Trinity (Plateau), Edwards (Balcones Fault Zone - San Antonio Region), Edwards (Balcones Fault Zone - Austin Region), Trinity Group, Carrizo-Wilcox, and Gulf Coast.

(8) **Natural barriers**--The natural characteristics of a site or surface and subsurface composition that serves to impede the movement of radioactive material. Natural barriers may include, for example, the location of a facility remote from an aquifer, or the sorptive capability of the soil surrounding a facility.

(9) **Processing**--The storage, extraction of materials, transfer, volume reduction, compaction, incineration, solidification, or other separation and preparation of radioactive substances

from other persons for reuse or disposal, including any treatment or activity that renders the waste less hazardous, safer for transport, or amenable to recovery, storage, or disposal.

(10) **Radioactive substances processing facility**--A facility where radioactive substances received from other persons are processed and/or repackaged according to United States Department of Transportation (DOT) regulations.

(11) **Radioactive substances storage facility**--A facility where radioactive substances received from other persons are stored while awaiting shipment to a licensed radioactive substances processing or disposal facility.

(12) **Reconnaissance level information**--Any information or analysis that can be retrieved or generated without the performance of new comprehensive site-specific investigations. Reconnaissance level information includes, but is not limited to, relevant published scientific literature; drilling records required by state agencies, such as the Railroad Commission of Texas, the Texas Commission on Environmental Quality, and the Texas Natural Resources Information System; and reports of governmental agencies.

(13) **Site**--The real property, including the buffer zone, on which a radioactive substances processing or storage facility may be located.

(14) **Site monitoring**--The procedures for the monitoring of the site and environment to assess quality of site operations and performance and to detect and quantify levels and types of

radioactivity and chemicals in the environment. It includes preoperational, operational, and license termination phases.

(15) **Site operations**--The routine day-to-day activities carried out at the site for the receipt, processing, and storage of radioactive substances.

(16) **Site suitability**--The capability of the various characteristics of a processing or storage facility or site to safely contain the radioactive substances expected to be present at the site.

(17) **Sole source aquifer**--The aquifer that is the sole or principal source of drinking water for an area designated under the Safe Drinking Water Act of 1974, 42 United States Code Annotated 300f, *et seq.*

(18) **Waste processing and storage categories**--Radionuclides classified as follows:

(A) any one of seven groups into which radionuclides in normal form are classified, according to their toxicity and their relative potential hazard in transport, as specified in §336.1231 of this title (relating to Radioactive Substances Processing and Storage Categories of Radionuclides); and

(B) any radionuclide not specifically listed in one of the categories in §336.1231 of this title shall be assigned to one of the categories in accordance with §336.1231(b) of this title.

(19) **Wetlands**--Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and that, under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include playa lakes, swamps, marshes, bogs, and similar areas.

**§336.1205. Activities Requiring License.**

Except for persons exempted by this subchapter, no person may receive, possess, store or process radioactive substances from another person except as authorized in a specific license issued in accordance with this subchapter.

**§336.1207. Radioactive Substances Processing and Storage Facility Classification.**

(a) Radioactive substances processing and storage facilities are classified according to the radionuclides, other than sealed sources, received, possessed, or processed in each of the waste processing and storage categories, as defined in §336.1203 of this title (relating to Definitions) with all applicable provisions, except that, for the purposes of this section which apply to processing and storage of radioactive substances, Category IV must include waste processing and storage categories IV-VII. The total possession limit of each category of unsealed (dispersible) radionuclides for each class of facility is as follows:

Figure: 30 TAC §336.1207(a)

	Category I	Category II	Category III	Category IV
Class I Storage or Processing Facility	10 mCi	100 mCi	1 Ci	10 Ci
Class II Storage Facility	2 Ci	20 Ci	200 Ci	2000 Ci
Class II Processing Facility	1 Ci	10 Ci	100 Ci	1000 Ci

(b) Class III storage facilities are those in which the applicable possession limit of radioactive substances exceeds any limit of Class II storage facilities.

(c) Class III processing facilities are those in which the applicable possession limit of radioactive substances exceeds any limit of Class II processing facilities.

**§336.1209. Exemptions.**

(a) Sealed sources. Persons who receive, possess, or process sealed sources of radioactive material as radioactive waste from other persons are exempt from this section, provided that:

(1) encapsulated sources are tested upon receipt and determined to have less than 0.005 microcurie of removable contamination; and

(2) sealed sources of radioactive material remain in sealed form after receipt.

(b) Unsealed sources.

(1) Persons who receive, possess, or process sources of radioactive material in unsealed form as radioactive waste from other persons are exempt from this section provided that:

(A) the total radioactivity of all radioactive waste possessed at any one time does not exceed the applicable limits for Class I processing or storage facilities as described in §336.1207 of this title (relating to Radioactive Substances Processing and Storage Facility Classification); and

(B) the total volume of radioactive waste processed in any one year does not exceed 50 cubic feet.

(2) Persons who receive, possess, and store radioactive material in unsealed form as radioactive substances from other persons are exempt from this section provided that:

(A) the radioactive substance consists only of radiopharmaceutical residues resulting from radiopharmaceuticals manufactured, compounded, and supplied by those persons receiving the radiopharmaceutical residues as radioactive waste;

(B) the radioactive substance is held in storage for decay to background radiation levels; and

(C) the radioactive substances is not shipped to a radioactive waste processing or disposal facility.

(c) Radioactive material. A person who receives, possesses, and stores radioactive material as waste from sites owned and controlled by that same person is not considered to have received waste from other persons.

**§336.1211. Filing Application for a Specific License.**

Unless otherwise specified, an applicant for a license to receive, possess, or process radioactive substances from other persons is subject to the requirements in §336.205 of this title (relating to Application Requirements). The applicant shall also comply with the following additional filing requirements.

(1) The applicant for a license to receive, possess, or process radioactive substances from other persons shall submit seven copies of each license application or application for amendment and any supporting documents in a manner specified by the agency. Applications for issuance of licenses must include all general and specific technical requirements, financial information, and environmental requirements, if applicable, described in this section.

(2) Each application must clearly demonstrate how the requirements of this section and §§336.1213, 336.1215, and 336.1217 of this title (relating to Additional Environmental Requirements for Class III Facilities, Issuance of Licenses, Commencement of Major Construction, respectively) have been addressed.

(3) Applications for licenses will be processed in accordance with the requirements of Chapter 281 of this title (relating to Applications Processing).

(4) An applicant for a license under this section must include the following additional information in the application:

(A) identity of the applicant including the full name, address, telephone number, and description of the business(es) or occupation(s) of the applicant;

(B) the organizational structure of the applicant, both off-site and on-site, including a description of lines of authority and assignments of responsibilities, whether in the form of administrative directives, contract provisions, or otherwise;

(C) a description of past operations that the applicant has been involved in including any license limitations, suspensions or revocations of such licenses, and any other information that will allow the agency to assess the applicant's past operating history;

(D) the technical qualifications, including training and experience, of the applicant and members of the applicant's staff to engage in the proposed activities; and minimum training and experience requirements for personnel;

(E) a description of the personnel training and retraining program;

(F) a statement of need and a description of the proposed activities identifying:

(i) the location of the proposed site;

(ii) the character of the proposed activities;

(iii) the types, chemical and/or physical forms and quantities of radioactive substances to be received, possessed, and processed; and

(iv) the plans for use of the facility for purposes other than processing of radioactive substances;

(G) proposed time schedules for construction and receipt and processing of radioactive waste at the proposed facility;

(H) description of the site and accurate drawings of the facility including, but not limited to:

(i) construction;

(ii) foundation details;

(iii) ventilation;

(iv) plumbing and fire suppression systems;

(v) physical security system;

(vi) storage areas;

(vii) radioactive substances handling or processing areas;

(viii) proximity to creeks or culverts; and

(ix) soil types under the facility with respect to compatibility with foundation and structural design;

(I) a description that demonstrates that the site suitability characteristics will meet the following requirements:

(i) the overall hydrogeologic environment of the site, in combination with engineering design, must act to minimize and control potential migration of radioactive substances into surface water and groundwaters;

(ii) no new site may be located in a 100-year floodplain, as designated by the Commission, or a wetland; and

(iii) no new site may be located in the recharge area of a sole source aquifer or a major aquifer unless it can be demonstrated with reasonable assurance that the new site will be designed, constructed, operated, and closed without an unreasonable risk to the aquifer.

(J) minimum criteria for facility design and operation to include:

(i) the building used for processing radioactive wastes must have a minimum classification of Type II (111) in accordance with National Fire Protection Association 220 titled, "Standard Types of Building Construction;"

(I) buildings used for processing or storage of radioactive substances shall have ventilation and fire protection systems to minimize the release of radioactive materials into the soils, waters, and the atmosphere; and

(II) facilities and equipment for repackaging leaking and/or damaged containers must be provided.

(ii) the design and operation of the radioactive substances processing or storage facility must be such that:

(I) releases of non-radiological noxious materials from the facility are minimized; and

(II) radiation levels, concentrations, and potential exposures off-site due to airborne releases during operations are within the limits established in Subchapter D of this chapter and are maintained as low as reasonably achievable.

(iii) the design and operation of the radioactive substances processing or storage facility must be compatible with the objectives of the site closure and decommissioning plan;

(iv) the facility must be designed to confine spills. Independent and diverse engineered barriers must be provided, as necessary, to complement natural barriers in minimizing potential releases from the facility and in complying with this section;

(v) the location and construction of any new radioactive substances processing facility must have a buffer zone adequate to permit emergency measures to be implemented following accidents and to address airborne plume dispersions and, as a minimum, shall be such that:

(I) the active components of a Class II facility are located at least 30 meters from the nearest residence as of the date of the license application; and

(II) the active components of a Class III facility are located at least 30 meters from the nearest property not owned or occupied by the licensee.

(K) a flow diagram of radioactive substances processing operations;

(L) a description and accurate drawings of processing equipment and any required special handling techniques to be employed;

(M) a description of personnel monitoring methods, training, and procedures to be followed to keep employees from ingesting and inhaling radioactive materials, including a description of methods to keep the radiation exposure to levels as low as reasonably achievable;

(N) a description of the site monitoring program to include prelicense data and proposed operational monitoring programs for direct gamma radiation measurements and radioactive and chemical characteristics of the soils, groundwater, surface waters, and vegetation, as applicable;

(i) for radioactive substances storage facilities, the applicant shall address on-site air quality; and

(ii) for radioactive substances processing facilities, the applicant shall address on-site and off-site air quality;

(O) spill detection and cleanup plans for the licensed site and for associated transportation of radioactive material;

(P) an operating, safety, and emergency procedures manual that must provide detailed procedures for receiving, handling, storing, processing, and shipping radioactive substances;

(Q) for radioactive substances processing facilities, a description of the equipment to be installed to maintain control over maximum concentrations of radioactive materials in gaseous and liquid effluents produced during normal operations and the means to be employed for keeping levels of radioactive material in effluents to unrestricted areas as low as reasonably achievable and within the limits listed in Subchapter D of this chapter;

(R) methods of ultimate disposal and decommissioning; and

(S) the system for maintaining inventory of receipt, storage, and transfer of radioactive substances.

(T) an adequate operating, radiation safety, and emergency procedures manual;  
and

(U) a signed certification from the owner or owners of the real property on which radioactive substances are stored or processed acknowledging that:

(i) radioactive substances are stored or processed on the property with the consent of the property owner or owners; and

(ii) decommissioning of the site may be required even if the applicant or licensee is unable or fails to decommission the site as required by a license, rule or order of the commission.

**§336.1213. Additional Environmental Requirements .**

An application for a license for a processing or storage facility must include environmental information that may be based on reconnaissance level information when appropriate and addresses the following:

(1) description of present land uses and population distribution in the vicinity of the site:

(A) for radioactive substances storage facilities, the description must address properties adjacent to the site; and

(B) for radioactive substances processing facilities, the description must address properties adjacent to the site and shall include population distribution within a one-mile radius of the site;

(2) area/site suitability including geology, hydrology, and natural hazards. For radioactive substances processing facilities, area meteorology also must be addressed;

(3) site and project alternatives including alternative siting analysis;

(4) socioeconomic effects on surrounding communities of operation of the licensed activity and of associated transportation of radioactive material; and

(5) environmental effects of postulated accidents.

**§336.1215. Issuance of Licenses.**

(a) A license for a radioactive substances processing or storage facility may be issued if the agency finds reasonable assurance that:

(1) an application meets the requirements of the Texas Radiation Control Act and the rules of the agency;

(2) the proposed radioactive substances facility will be sited, designed, operated, decommissioned, and closed in accordance with this chapter;

(3) the issuance of the license will not be inimical to the health and safety of the public or the environment; and

(4) there is no reason to deny the license because of:

(A) any material false statement in the application or any statement of fact required under provisions of the Texas Radiation Control Act;

(B) conditions revealed by the application or statement of fact or any report, record, or inspection, or other means that would warrant the agency to refuse to grant a license on an application; or

(C) failure to clearly demonstrate how the requirements in this chapter have been addressed; and

(5) qualifications of the designated radiation safety officer (RSO) are adequate for the purpose requested in the application and include as a minimum:

(A) have earned at least a bachelor's degree in a physical or biological science, industrial hygiene, health physics, radiation protection, or engineering from an accredited college or university, or an equivalent combination of training and relevant experience, with two years of relevant experience equivalent to a year of academic study, from a uranium or mineral extraction/recovery, radioactive waste processing, or a radioactive waste or by-product material disposal facility;

(B) have at least one year of relevant experience, in addition to that used to meet the educational requirement, working under the direct supervision of the radiation safety officer at a uranium or mineral extraction/recovery, radioactive waste processing, or radioactive waste or by-product material disposal facility; and

(C) have at least four weeks of specialized training in health physics or radiation safety applicable to uranium or mineral extraction/recovery, radioactive waste processing, or radioactive waste or by-product material disposal operations from a course provider that has been evaluated and approved by the agency.

(b) The agency may request, and the licensee must provide, additional information after the license has been issued to enable the agency to determine whether the license should be modified, suspended, or revoked.

**§336.1217. Commencement of Major Construction.**

Commencement of major construction is prohibited until a license has been issued by the commission.

**§336.1219. Commencement of Operations.**

No licensee issued a license under this section may commence operations until the licensee has obtained licenses or permits from other agencies as required by law.

**§336.1221. Specific Terms and Conditions of Licenses.**

(a) Unless otherwise specified, each license issued in accordance with this subchapter is subject to the requirements in §305.125 of this title (relating to Standard Permit Conditions). A license issued under this subchapter must include license conditions derived from the evaluations of the application and analyses performed by the agency, including amendments and changes made before a license is issued.

License conditions may include, but are not limited to, the following:

(1) restrictions as to the total radioactive inventory of radioactive substances to be received;

(2) restrictions as to size, shape, and materials and methods of construction of radioactive substances packaging and maximum number of package units stored, at any one time;

(3) restrictions as to the physical and chemical form and radioisotopic content and concentration of radioactive substances;

(4) controls to be applied to restrict access to the site;

(5) controls to be applied to maintain and protect the health and safety of the public and site employees and the environment;

(6) administrative controls, which are the provisions relating to organization, management, and operating procedures; record-keeping, review and audit; and reporting necessary to

assure that activities at the facility are conducted in a safe manner and in conformity with agency rules and license conditions;

(7) maximum retention time for radioactive substances received at the facility; and

(8) term of the specific license for a fixed term not to exceed ten years.

(b) The commission may incorporate in any license at the time of issuance, or thereafter, by appropriate rule or order, additional requirements or conditions with respect to the licensee's receipt, possession, or transfer of radioactive substances 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 licenses that may be necessary or appropriate to effectuate the purposes of the Texas Radiation Control Act and rules thereunder.

(c) Each person licensed by the commission in accordance with this subchapter shall confine the use and possession of the radioactive substance licensed to the locations and purposes authorized in the license.

**§336.1223. Renewal of Licenses.**

(a) Renewal of licenses must be filed in accordance with §336.205 of this title (relating to Application Requirements) and §336.1211 of this title (relating to Filing Application for a Specific License).

(b) The licensee is responsible for decommissioning the facility and continued safe storage of any radioactive substances whether an application for continued receipt of radioactive substances is filed or not.

**§336.1225. Amendment of License at Request of Licensee.**

Applications for amendment of a license shall be filed in accordance with §336.1211 of this title (relating to Filing Application for a Specific License) and §336.205 of this title (relating to Application Requirements). Amendment applications must be signed by the RSO, specify the proposed amendment, and describe the basis for such amendment.

**§336.1227. Radioactive Substances Processing and Packaging Requirements.**

All processed radioactive substances offered for transport or disposal must meet:

(1) all applicable transportation requirements of the agency, the United States Nuclear Regulatory Commission, and of the DOT; and

(2) all applicable disposal facility license conditions.

**§336.1229. Environmental Assessment.**

A written analysis of the impact on the human environment will be prepared or secured by the agency for any license for a class III processing or storage facility in accordance with §281.21(f) of this title (relating to Draft Permit, Technical Summary, Fact Sheet, and Compliance History).

**§336.1231. Radioactive Substances Processing and Storage Categories of Radionuclides.**

(a) The following table contains waste processing and storage categories of radionuclides.

Figure: 30 TAC §336.1231(a)

Element*	Radionuclide**	Category
Actinium (89)	Ac-227	I
	Ac-228	I
Americium (95)	Am-241	I
	Am-243	I
Antimony (51)	Sb-122	IV
	Sb-124	III
	Sb-125	III
Argon (18)	Ar-37	VI
	Ar-41	II
	Ar-41 (uncompressed)†	V
Arsenic (33)	As-73	IV
	As-74	IV
	As-76	IV
	As-77	IV
Astatine (85)	At-211	III
Barium (56)	Ba-131	IV

Element*	Radionuclide**	Category
	Ba-133	II
	Ba-140	III
Berkelium (97)	Bk-249	I
Beryllium (4)	Be-7	IV
Bismuth (83)	Bi-206	IV
	Bi-207	III
	Bi-210	II
	Bi-212	III
Bromine (35)	Br-82	IV
Cadmium (48)	Cd-109	IV
	Cd-115m	III
	Cd-115	IV
Calcium (20)	Ca-45	IV
	Ca-47	IV
Californium (98)	Cf-249	I
	Cf-250	I
	Cf-252	I
Carbon (6)	C-14	IV
Cerium (58)	Ce-141	IV
	Ce-143	IV
	Ce-144	III
Cesium (55)	Cs-131	IV
	Cs-134mCs-134	IIIIII
	Cs-135	IV
	Cs-136	IV
	Cs-137	III
Chlorine (17)	Cl-36	III
	Cl-38	IV
Chromium (24)	Cr-51	IV
Cobalt (27)	Co-56	III
	Co-57	IV
	Co-58m	IV
	Co-58	IV
	Co-60	III
Copper (29)	Cu-64	IV
Curium (96)	Cm-242	I
	Cm-243	I
	Cm-244	I

Element*	Radionuclide**	Category
	Cm-245	I
	Cm-246	I
Dysprosium (66)	Dy-154	III
	Dy-165	IV
	Dy-166	IV
Erbium (68)	Er-169	IV
	Er-171	IV
Europium (63)	Eu-150Eu-152m	IIIIV
	Eu-152	III
	Eu-154	II
	Eu-155	IV
Fluorine (9)	F-18	IV
Gadolinium (64)	Gd-153	IV
	Gd-159	IV
Galium (31)	Ga-67	III
	Ga-72	IV
Germanium (32)	Ge-71	IV
Gold (79)	Au-193	III
	Au-194	III
	Au-195	III
	Au-196	IV
	Au-198	IV
	Au-199	IV
Hafnium (72)	Hf-181	IV
Holmium (67)	Ho-166	IV
Hydrogen (1)	H-3 (see tritium)	
Indium (49)	In-113m	IV
	In-114m	III
	In-115m	IV
	In-115	IV
Iodine (53)	I-124	III
	I-125I-126	IIIIII
	I-129	III
	I-131	III
	I-132	IV
	I-133	III
	I-134	IV
	I-135	IV

Element*	Radionuclide**	Category
Iridium (77)	Ir-190	IV
	Ir-192	III
	Ir-194	IV
Iron (26)	Fe-55	IV
	Fe-59	IV
Krypton (36)	Kr-85m	III
	Kr-85m (uncompressed)†	V
	Kr-85	III
	Kr-85 (uncompressed)†	VI
	Kr-87	II
	Kr-87 (uncompressed)†	V
Lanthanum (57)	La-140	IV
Lead (82)	Pb-203	IV
	Pb-210	II
	Pb-212	II
Lutetium (71)	Lu-172Lu-177	IIIIV
Magnesium (12)	Mg-28	III
Manganese (25)	Mn-52	IV
	Mn-54	IV
	Mn-56	IV
Mercury (80)	Hg-197m	IV
	Hg-197	IV
	Hg-203	IV
Mixed fission products (MFP)		II
Molybdenum (42)	Mo-99	IV
Neodymium (60)	Nd-147	IV
	Nd-149	IV
Neptunium (93)	Np-237	I
	Np-239	I
Nickel (28)	Ni-56	III
	Ni-59	IV
	Ni-63	IV
	Ni-65	IV
Niobium (41)	Nb-93m	IV
	Nb-95	IV
	Nb-97	IV

Element*	Radionuclide**	Category
Osmium (76)	Os-185	IV
	Os-191m	IV
	Os-191Os-193	IVIV
Palladium (46)	Pd-103	IV
	Pd-109	IV
Phosphorus (15)	P-32	IV
Platinum (73)	Pt-191	IV
	Pt-193	IV
	Pt-193m	IV
	Pt-197m	IV
	Pt-197	IV
Plutonium (94)	Pu-238 F	I
	Pu-239 F	I
	Pu-240	I
	Pu-241 F	I
	Pu-242	I
Polonium (84)	Po-210	I
Potassium (19)	K-42	IV
	K-43	III
Praseodymium (59)	Pr-142	IV
	Pr-143	IV
Promethium (61)	Pm-147	IV
	Pm-149	IV
Protactinium (91)	Pa-230	I
	Pa-231	I
	Pa-233	II
Radium (88)	Ra-223	II
	Ra-224	II
	Ra-226	I
	Ra-228	I
Radon (86)	Rn-220	IV
	Rn-222	II
Rhenium (75)	Re-183	IV
	Re-186	IV
	Re-187	IV
	Re-188	IV
	Re-Natural	IV
Rhodium (45)	Rh-103m	IV
	Rh-105	IV

Element*	Radionuclide**	Category
Rubidium (37)	Rb-86	IV
	Rb-87	IV
	Rb-Natural	IV
Ruthenium (44)	Ru-97	IV
	Ru-103	IV
	Ru-105	IV
	Ru-106	III
Samarium (62)	Sm-145	III
	Sm-147	III
	Sm-151Sm-153	IVIV
Scandium (21)	Sc-46	III
	Sc-47	IV
	Sc-48	IV
Selenium (34)	Se-75	IV
Silicon (14)	Si-31	IV
Silver (47)	Ag-105	IV
	Ag-110m	III
	Ag-111	IV
Sodium (11)	Na-22	III
	Na-24	IV
Strontium (38)	Sr-85m	IV
	Sr-85	IV
	Sr-89	III
	Sr-90	II
	Sr-91	III
	Sr-92	IV
Sulfur (16)	S-35	IV
Tantalum (73)	Ta-182	III
Technetium (43)	Tc-96m	IV
	Tc-96	IV
	Tc-97m	IV
	Tc-97	IV
	Tc-99mTc-99	IVIV
Tellurium (52)	Te-125m	IV
	Te-127m	IV
	Te-127	IV
	Te-129m	III
	Te-129	IV
	Te-131m	III

Element*	Radionuclide**	Category
	Te-132	IV
Terbium (65)	Tb-160	III
Thallium (81)	Tl-200	IV
	Tl-201	IV
	Tl-202	IV
	Tl-204	III
Thorium (90)	Th-227	II
	Th-228	I
	Th-230	I
	Th-231	I
	Th-232	III
	Th-234	II
	Th-Natural	III
Thulium (69)	Tm-168	III
	Tm-170	III
	Tm-171	IV
Tin (50)	Sn-113	IV
	Sn-117m	III
	Sn-121	III
	Sn-125	IV
Tritium (1)	H-3	IV
	H-3 (as a gas, as luminous paint, or adsorbed on solid material.)	VII
Tungsten (74)	W-181	IV
	W-185	IV
	W-187	IV
Uranium (92)	U-230	II
	U-232	I
	U-233 F	II
	U-234	II
	U-235 F	III
	U-236	II
	U-238	III
	U-Natural	III
	U-Enriched F	III
	U-Depleted	III
Vanadium (23)	V-48	IV
	V-49	III
Xenon (54)	Xe-125	III

Element*	Radionuclide**	Category
	Xe-131m	III
	Xe-131m (uncompressed)†	V
	Xe-133	III
	Xe-133 (uncompressed)†	VI
	Xe-135	II
	Xe-135 (uncompressed)†	V
Ytterbium (70)	Yb-175	IV
Yttrium (39)	Y-88	III
	Y-90	IV
	Y-91m	III
	Y-91	III
	Y-92	IV
	Y-93	IV
Zinc (30)	Zn-65	IV
	Zn-69m	IV
	Zn-69	IV
Zirconium (40)	Zr-93	IV
	Zr-95	III
	Zr-97	IV

NOTE: For mixtures of radionuclides and for radionuclides not included in this subsection, see subsection (b) of this section, waste processing and storage categories.

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\* Atomic number shown in parentheses.

\*\* Atomic mass number shown after the element symbol.

F Fissile material.

m Metastable state.

† Uncompressed means at a pressure not exceeding 1 atmosphere.

(b) Any radionuclide not specifically listed in subsection (a) of this section must be assigned to one of the categories in accordance with the following table.

Figure: 30 TAC §336.1231(b)

Radionuclide Atomic No. 1-81 Atomic No. 82 and over	RADIOACTIVE HALF-LIFE		
	0 to 1000 days	1000 days to 10 <sup>6</sup> years	Over 10 <sup>6</sup> years
	Category III	Category II	Category III
	Category I	Category I	Category III

(c) For mixtures of radionuclides, the following must apply.

(1) If the identity and respective activity of each radionuclide are known, the permissible activity of each radionuclide shall be such that the sum, for all categories present, of the ratio between the total activity for each category to the permissible activity for each category will not be greater than unity.

(2) If the categories of the radionuclides are known but the amount in each category cannot be reasonably determined, the mixture must be assigned to the most restrictive category present.

(3) If the identity of all or some of the radionuclides cannot be reasonably determined, each of those unidentified radionuclides shall be considered as belonging to the most restrictive category that cannot be positively excluded.

(4) Mixtures consisting of a single radioactive decay chain where the radionuclides are in the naturally occurring proportions must be considered as consisting of a single radionuclide. The category and activity must be that of the first member present in the chain, except that if radionuclide "X" has a half-life longer than that of that first member and an activity greater than that of any other member,

including the first, at any time during processing, the waste processing and storage category must be that of nuclide "X" and the activity of the mixture must be the maximum activity of nuclide "X" during processing.

**§336.1233. Radiation Safety Committee.**

The duties and responsibilities of the Radiation Safety Committee include but are not limited to the following:

(1) meeting as often as necessary to conduct business but no less than three times a year;

(2) reviewing summaries of the following information presented by the radiation safety officer:

(A) over-exposures;

(B) significant incidents, including spills, contamination, or medical events; and

(C) items of noncompliance following an inspection;

(3) reviewing the program for maintaining doses as low as reasonably achievable, and providing any necessary recommendations to ensure doses are as low as reasonably achievable;

- (4) reviewing the overall compliance status for authorized users;
- (5) sharing responsibility with the radiation safety officer to conduct periodic audits of the radiation safety program;
- (6) reviewing the audit of the radiation safety program and acting upon the findings;
- (7) developing criteria to evaluate training and experience of new authorized user applicants;
- (8) evaluating and approving authorized user applicants who request authorization to use radioactive material at the facility;
- (9) evaluating new uses of radioactive material; and
- (10) reviewing and approving permitted program and procedural changes prior to implementation.

**§336.1235. Financial Assurance for Storage and Processing.**

A licensee or applicant must establish financial assurance under the requirements of 25 TAC Chapter 289 (relating to Radiation Control).