

Texas Commission on Environmental Quality

Interoffice Memorandum

To: Commissioners **Date:** August 22, 2014

Thru: Bridget C. Bohac, Chief Clerk
Richard A. Hyde, P.E., Executive Director

From: Brent Wade, Deputy Director
Office of Waste

Subject: Consideration of a Petition for Rulemaking

Docket No.: 2014-0902-RUL

Project No.: 2014-028-PET-NR

Who Submitted the Petition:

On July 21, 2014, the Texas Commission on Environmental Quality (TCEQ) received a petition for rulemaking from Waste Control Specialists LLC (petitioner or WCS).

What the Petitioner Requests:

The petitioner requests that the commission amend 30 TAC Chapter 336, Radioactive Substances Rules, by modifying certain provisions related to regulatory criteria for certain types of radioactive wastes so as to better align certain definitions and disposal criteria in Chapter 336 with state and federal statutes and regulations.

In their petition, the petitioner states:

Certain existing regulations in Chapter 336 concerning "low-level radioactive waste" and "federal facility waste" are inconsistent with the Texas Radiation Control Act ("TRCA") and the federal Low-Level Radioactive Waste Policy Amendments Act of 1985 ("LLWPAA"). Under the TRCA and the LLWPAA, the term "federal facility waste" includes certain low-level radioactive waste ("LLW") that is classified as greater than Class C ("GTCC") LLW and other waste known as GTCC-like LLW.¹ TCEQ's current regulations, however, define the term "federal facility waste" differently than the TRCA by expressly excluding GTCC LLW from the definition. Similarly, TCEQ's regulatory definition of "low-level radioactive waste" differs from the definition of that term in the TRCA by expressly excluding transuranic ("TRU") waste, and, while the TRCA does not define "transuranic waste," the TCEQ's definition differs from the definition used by the United States Environmental Protection Agency ("EPA") and other relevant agencies. TCEQ should amend these regulatory definitions to make them consistent with the statutes and with relevant federal regulations.

The petitioner proposes very specific rule language changes:

¹ LLW generated or owned by the United States Department of Energy ("DOE") is encompassed by the TRCA's definition of "federal facility waste." However, such DOE waste is not classified according to the classification system developed by the Nuclear Regulatory Commission ("NRC"). Thus, certain DOE waste that possesses the same characteristics as GTCC waste is known as "GTCC-like LLW."

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Amend 30 TAC §336.2(50) as follows:

(50) Federal facility waste--Low-level radioactive waste that is the responsibility of the federal government under the Low-Level Radioactive Waste Policy Act, as amended by the Low-Level Radioactive Waste Policy Amendments Act of 1985 (42 United States Code, §2021b-2021j). ~~Excluded from this definition is low-level radioactive waste that is classified as greater than Class C in § 336.362 of this title (relating to Appendix E. Classification and Characteristics of Low-Level Radioactive Waste).~~

Amend 30 TAC §336.2(77) as follows:

(77) Low-level radioactive waste--

[. . .]

(B) Low-level radioactive waste does not include:

(i) high-level radioactive waste defined by 10 CFR §60.2;

(ii) spent nuclear fuel as defined by 10 CFR §72.3;

~~(iii) transuranic waste as defined in this section;~~

(iii) (iv) byproduct material as defined by paragraph (16)(B) - (E) of this section;

(iv) (v) naturally occurring radioactive material (NORM) waste; or

(v) (vi) oil and gas NORM waste.

[. . .]

Amend 30 TAC §336.2(141) as follows:

(141) Transuranic waste--For the purposes of this chapter, wastes containing alpha emitting transuranic radionuclides with a half-life greater than twenty five years at concentrations greater than 100 nanocuries/gram, except for: (1) wastes that the United States Department of Energy has determined, with the concurrence of the United States Environmental Protection Agency, do not need the degree of isolation required by 40 CFR Part 191; or (2) wastes that the commission has approved for disposal in accordance with §336.733 of this title.

Amend 30 TAC §336.362(a)(2)(D) as follows:

(D) Waste that is not generally acceptable for near-surface disposal is waste for which form and disposal methods must be different, and in general more stringent, than those specified for Class C waste. Disposal of low-level radioactive waste exceeding the Class C limitations specified in this section that results from activities

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licensed by the United States Nuclear Regulatory Commission (NRC) is subject to NRC's authority. Disposal of this waste is regulated by the United States Nuclear Regulatory Commission.

Amend 30 TAC §336.701(b) as follows:

(b) A licensee authorized to dispose of low-level radioactive waste under the rules in this subchapter shall not accept for disposal:

- (1) high-level radioactive waste as defined in 10 Code of Federal Regulations (CFR) §60.2 as amended through October 27, 1988 (53 FR 43421) (Definitions--high-level radioactive wastes in geologic repositories);
- (2) byproduct material as defined in §336.2(13)(B) of this title; or
- (3) spent or irradiated nuclear fuel;
- ~~(4) waste that is not generally acceptable for near-surface disposal as specified in § 336.362 of this title (relating to Appendix E. Classification and Characteristics of Low Level Radioactive Waste); or~~
- ~~(5) waste that exceeds Class C limitations as specified in § 336.362 of this title.~~

Amend 30 TAC §336.733 by adding a new subsection (d) as follows:

(d) The commission may, upon request or on its own initiative, authorize other provisions for the classification and characteristics of waste on a specific basis, if, after evaluation of the specific characteristics of the waste, disposal site, and method of disposal, it finds reasonable assurance of compliance with the performance objective specified in this chapter.

Recommended Action and Justification:

The executive director recommends rulemaking after a few stakeholder meetings to determine which sections of the rules and language should be addressed. The executive director cannot determine if the petitioner's specific rule language revisions requested are appropriate without further input from stakeholders, especially input from the United States Department of Energy and the United States Nuclear Regulatory Commission. The executive director agrees that the current rules regarding GTCC and TRU may not comport with the current federal statutes, regulations and policies and may create unnecessary conflicts with disposal at the low-level radioactive disposal federal facility contracted with United States Department of Energy.

The executive director agrees that the GTCC and TRU concepts and definitions are not mentioned specifically in federal or Texas statute and Texas rules should be revised to allow flexibility to accommodate changes in federal law, regulation and policy regarding GTCC and TRU disposal. In the past, TCEQ promulgated a rule based on the former situation in which there were no disposal options for GTCC or TRU, and when the federal agencies were not considering the disposal options available today. As stated in the recent

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major amendment to the LLRW license R04100 the language regarding GTCC and TRU needs to accommodate the federal agencies' charged with making determinations as to what waste is determined to be "federal facility waste" without creating an issue with Texas' compatibility with NRC rules and Agreement State status.

The executive director agrees that the Texas Legislature has remained silent on GTCC with regard to the federal facility waste definition, and currently only the TCEQ rules mention it. Unlike the TRCA definition of "federal facility waste,"² the TCEQ regulatory definition states that "low-level radioactive waste that is classified as greater than Class C in §336.362 of [TCEQ's rules]" is excluded from the definition of "federal facility waste." Section 336.362 of TCEQ's rules, which states, "Waste that is not generally acceptable for near-surface disposal is waste for which form and disposal methods must be different, and in general more stringent, than those specified for Class C waste. *Disposal of this waste is regulated by the United States Nuclear Regulatory Commission.*"³

In summary, the executive director agrees that this rule language may not comport with current federal law, policy, and regulation, and would appreciate the opportunity to engage federal government and other stakeholders in a transparent process with public participation and formal comment that rulemaking will afford.

Applicable Law:

- Texas Government Code, §2001.021, which establishes the procedures by which an interested person may petition a state agency for the adoption of a rule
- 30 TAC §20.15, which provides such procedures specific to the commission
- Low-Level Radioactive Waste Policy Amendments Act of 1985 ["LLWPAA"] (42 United States Code (USC), §§2021b - 2021j, subsection 3(b)(1) of the LLWPAA (42 USC, §2021c(b)(1))
- Texas Health and Safety Code, §§401.0005 - 401.522, 401.2005(4), 401.216, 401.2005(4)
- 30 TAC §§336.2(50), (77), and (141), 336.362(a)(2)(D), 336.701(b), and 336.733 (and all referenced federal statutes, rules and federal register citations therein)

Agency contacts:

Charles Maguire, Rule Project Manager, (512) 239-5308, Radioactive Waste Division
Amie Richardson, Staff Attorney, (512) 239-2999
Kris Hogan, Texas Register Coordinator, (512) 239-6812

Attachment
WCS Petition

² Tex. Health & Safety Code § 401.2005(4).

³ 30 Tex. Admin. Code § 336.362(a)(2)(D) (emphasis added).

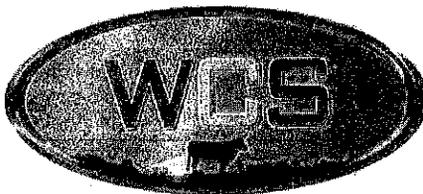
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cc: Chief Clerk, 2 copies
Executive Director's Office
Marshall Coover
Tucker Royall
Pattie Burnett
Office of General Counsel
Charles Maguire
Kris Hogan



THE TEXAS SOLUTION

RECEIVED

JUL 21 2014

TEXAS REGISTER TEAM

July 21, 2014

Via Hand Delivery

Mr. Richard Hyde
Executive Director
Texas Commission on Environmental Quality
P.O. Box 13087 — MC 109
Austin, Texas 78711-3087

Re: Petition for Rulemaking; 30 TAC Chapter 336; Radioactive Substance Rules

Dear Mr. Hyde:

Waste Control Specialists LLC ("WCS") submits the enclosed petition for rulemaking seeking revisions to 30 Texas Administrative Code (TAC), Chapter 336, *Radioactive Substance Rules*.

WCS requests that the Texas Commission on Environmental Quality revise certain provisions to 30 TAC 336 related to regulatory criteria for certain types of radioactive wastes. As explained in the petition, the revisions serve to better align certain definitions and disposal criteria in 30 TAC 336 with the state and federal statutes and regulations.

If you or your staff have any questions regarding this petition, please contact me at (972) 450-4235.

Very truly yours,

Rod Baltzer
WCS President

Enclosure

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PETITION FOR ADOPTION OF RULES

Waste Control Specialists LLC ("WCS") hereby petitions the Texas Commission on Environmental Quality ("TCEQ") for adoption of rules to revise Chapter 336, *Radioactive Substance Rules*, of Title 30 of the Texas Administrative Code ("TAC").

Name and Address of Petitioner

Waste Control Specialists LLC
c/o Rod Baltzer, President
5430 LBJ Freeway
Suite 1700
Dallas, Texas 75240-2620

Purpose of the Proposed Rules

Certain existing regulations in 30 TAC Chapter 336 concerning "low-level radioactive waste" and "federal facility waste" are inconsistent with the Texas Radiation Control Act ("TRCA") and the federal Low-Level Radioactive Waste Policy Amendments Act of 1985 ("LLWPAA"). Under the TRCA and the LLWPAA, the term "federal facility waste" includes certain low-level radioactive waste ("LLW") that is classified as greater than Class C ("GTCC") LLW and other waste known as GTCC-like LLW.¹ TCEQ's current regulations, however, define the term "federal facility waste" differently than the TRCA by expressly excluding GTCC LLW from the definition. Similarly, TCEQ's regulatory definition of "low-level radioactive waste" differs from the definition of that term in the TRCA by expressly excluding transuranic ("TRU") waste, and, while the TRCA does not define "transuranic waste," the TCEQ's definition differs from the definition used by the U.S. Environmental Protection Agency ("EPA") and other relevant agencies. TCEQ should amend these regulatory definitions to make them consistent with the statutes and with relevant federal regulations.

Under the TRCA, TCEQ is authorized to license disposal of certain GTCC LLW and GTCC-like LLW. There is an acute need for safe, permanent disposal options for this LLW. The TRCA establishes the framework for the Federal Facility Waste Disposal Facility ("FWF") precisely so that a disposal facility can be made available for federal facility waste. Pursuant to the TRCA, TCEQ licensed and WCS constructed and operates the FWF in Andrews County, Texas. However, the FWF cannot currently accept GTCC LLW or GTCC-like LLW for disposal. The changes proposed in this petition will provide TCEQ with flexibility authorized by the TRCA.

Aligning the regulatory definitions of "low-level radioactive waste" and "federal facility waste" with the definitions of those terms in statute will not automatically allow WCS to accept GTCC LLW or GTCC-like LLW. The disposal of that waste, as contemplated by the Texas

¹ LLW generated or owned by the United States Department of Energy ("DOE") is encompassed by the TRCA's definition of "federal facility waste." However, such DOE waste is not classified according to the classification system developed by the Nuclear Regulatory Commission ("NRC"). Thus, certain DOE waste that possesses the same characteristics as GTCC waste is known as "GTCC-like LLW."

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Legislature and expressed in the TRCA, requires other changes to TCEQ regulations as well as changes to WCS's disposal license. TCEQ should amend certain regulatory provisions discussed below to remove the unnecessary and statutorily-inconsistent prohibitions on disposal of GTCC LLW and GTCC-like LLW at the FWF. Additionally, TCEQ should amend the regulations to ensure that a thorough technical analysis (i.e., a performance assessment) can be conducted to determine if sufficiently protective and safe disposal of GTCC or GTCC-like federal facility waste can be accomplished at the FWF. To be clear, the proposed rules have no effect on the prohibition on accepting high-level radioactive waste for disposal.

Text of the Proposed Rules

Amend 30 TAC 336.2(50) as follows:

(50) Federal facility waste--Low-level radioactive waste that is the responsibility of the federal government under the Low-Level Radioactive Waste Policy Act, as amended by the Low-Level Radioactive Waste Policy Amendments Act of 1985 (42 United States Code, § 2021b-2021j). ~~Excluded from this definition is low-level radioactive waste that is classified as greater than Class C in § 336.362 of this title (relating to Appendix E, Classification and Characteristics of Low-Level Radioactive Waste).~~

Amend 30 TAC 336.2(77) as follows:

(77) Low-level radioactive waste--

[...]

(B) Low-level radioactive waste does not include:

- (i) high-level radioactive waste defined by 10 CFR § 60.2;
- (ii) spent nuclear fuel as defined by 10 CFR § 72.3;
- ~~(iii) transuranic waste as defined in this section;~~
- (iv) byproduct material as defined by paragraph (16)(B)-(E) of this section;
- (v) naturally occurring radioactive material (NORM) waste; or
- (vi) oil and gas NORM waste.

[...]

Amend 30 TAC 336.2(141) as follows:

(141) Transuranic waste--For the purposes of this chapter, wastes containing alpha emitting transuranic radionuclides with a half-life greater than ~~five~~twenty years at concentrations greater than 100 nanocuries/gram, except for: (1) wastes that the United States Department of Energy has determined, with the concurrence of the United States Environmental Protection Agency, do not need the degree of isolation required by 40 CFR Part 191; or (2) wastes that the commission has approved for disposal in accordance with § 336.733 of this title.

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Amend 30 TAC 336.362(a)(2)(D) as follows:

(D) Waste that is not generally acceptable for near-surface disposal is waste for which form and disposal methods must be different, and in general more stringent, than those specified for Class C waste. Disposal of low-level radioactive waste exceeding the Class C limitations specified in this section that results from activities licensed by the United States Nuclear Regulatory Commission (NRC) is subject to NRC's authority. Disposal of this waste is regulated by the United States Nuclear Regulatory Commission.

Amend 30 TAC 336.701(b) as follows:

(b) A licensee authorized to dispose of low-level radioactive waste under the rules in this subchapter shall not accept for disposal:

- (1) high-level radioactive waste as defined in 10 Code of Federal Regulations (CFR) § 60.2 as amended through October 27, 1988 (53 FR 43421) (Definitions--high-level radioactive wastes in geologic repositories);
- (2) byproduct material as defined in § 336.2(13)(B) of this title; or
- (3) spent or irradiated nuclear fuel;
- ~~(4) waste that is not generally acceptable for near-surface disposal as specified in § 336.362 of this title (relating to Appendix E. Classification and Characteristics of Low-Level Radioactive Waste); or~~
- ~~(5) waste that exceeds Class C limitations as specified in § 336.362 of this title.~~

Amend 30 TAC 336.733 by adding a new subsection (d) as follows:

(d) The commission may, upon request or on its own initiative, authorize other provisions for the classification and characteristics of waste on a specific basis, if, after evaluation of the specific characteristics of the waste, disposal site, and method of disposal, it finds reasonable assurance of compliance with the performance objective specified in this chapter.

Explanation of the Proposed Rules

Under the TRCA, "The commission may license the compact waste disposal facility license holder to dispose of federal facility waste."² The statute defines "federal facility waste" as "low-level radioactive waste that is the responsibility of the federal government under the Low-Level Radioactive Waste Policy Act, as amended by the Low-Level Radioactive Waste Policy Amendments Act of 1985 (42 U.S.C. Sections 2021b-2021j)."³ The LLWPAA, in turn, specifies the particular LLW that is the responsibility of the federal government. That waste includes certain GTCC LLW and GTCC-like LLW, including TRU waste.⁴ The Texas

² Tex. Health & Safety Code § 401.216.

³ Tex. Health & Safety Code § 401.2005(4).

⁴ Specifically, Section 3(b)(1) of the LLWPAA (42 U.S.C. § 2021c(b)(1)) states:

- (b)(1) The Federal Government shall be responsible for the disposal of-
- (A) low-level radioactive waste owned or generated by the Department of Energy;

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Legislature did not circumscribe the definition of "federal facility waste" by carving out GTCC or GTCC-like LLW, even though the waste that is the responsibility of the federal government under the LLWPAA undoubtedly includes certain GTCC and GTCC-like waste. The amendment to 30 TAC 336.2(50) is proposed because TCEQ's regulatory definition should mirror the statutory definition. There is no reason to believe that the TRCA intended to exclude GTCC LLW or GTCC-like LLW. To the contrary, according to its express language, the statute unambiguously includes all waste that is the responsibility of the federal government under the LLWPAA.

The amendment to 30 TAC 336.362(a)(2)(D) is proposed in conjunction with the change to TCEQ's regulatory definition of "federal facility waste" in order to emphasize and clarify that NRC's authority over GTCC LLW that "results from activities licensed by" NRC is not at all altered by the change to the definition of "federal facility waste." This amendment may be important to ensure that NRC understands that the proposed TCEQ rule changes do not affect NRC's jurisdiction.

Similar to the proposed amendment to align the regulatory definition of "federal facility waste" with the statutory definition, this petition for rulemaking also seeks amendment to the regulatory definition of "low-level radioactive waste" to be consistent with the statutory definition. The TRCA defines "low-level radioactive waste," in part, by stating a list of five radioactive materials that are excluded from the term.⁵ The TCEQ regulatory definition of the term adds a sixth type of material to the list of exclusions, TRU waste.⁶ The exclusion of TRU waste is an unnecessary departure from the statutory definition. Further, the TRCA provides TCEQ the state statutory authority to authorize disposal of federal facility waste, which includes TRU waste. The TCEQ's regulatory exclusion of TRU waste in the definition of "low-level radioactive waste" might be read to restrict the disposal authorized by the TRCA. TCEQ should not unnecessarily restrict its statutorily granted flexibility.

-
- (B) low-level radioactive waste owned or generated by the United States Navy as a result of the decommissioning of vessels of the United States Navy;
 - (C) low-level radioactive waste owned or generated by the Federal Government as a result of any research, development, testing, or production of any atomic weapon; and
 - (D) any other low-level radioactive waste with concentrations of radionuclides that exceed the limits established by the Commission for class C radioactive waste, as defined by section 61.55 of title 10, Code of Federal Regulations, as in effect on January 26, 1983.

⁵ Tex. Health & Safety Code § 401.004(b) states:

- (b) "Low-level radioactive waste" does not include:
 - (1) high-level radioactive waste as defined by 10 C.F.R. Section 60.2;
 - (2) spent nuclear fuel as defined by 10 C.F.R. Section 72.3;
 - (3) by-product material described by Section 401.003(3)(b);
 - (4) naturally occurring radioactive material waste that is not oil and gas NORM waste; or
 - (5) oil and gas NORM waste

⁶ See 30 TAC 336.2(77)(B).

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The current regulatory definition of “transuranic waste” differs in important ways from EPA’s definition,⁷ and, like the current TCEQ definitions of “federal facility waste” and “low-level radioactive waste,” unnecessarily restricts the authority granted to TCEQ by the TRCA. EPA excludes from “transuranic radioactive wastes” those “wastes that the Department [of Energy] has determined, with the concurrence of the Administrator [of EPA], do not need the degree of isolation required by [40 CFR Part 191]” and “wastes that the [Nuclear Regulatory] Commission has approved for disposal on a case-by-case basis in accordance with 10 CFR Part 61.”⁸ The proposed amendment sought by this petition mimics EPA’s definition. These changes are important to ensure that waste that can be properly and safely disposed of at the FWF is not arbitrarily prohibited because of an unnecessarily restrictive definition of TRU waste. Under federal regulations, TRU waste can become simply GTCC LLW if it fits within EPA’s the regulatory exceptions. The changes proposed here would follow that model.

30 TAC 336.701(b)(4) and (5) should be deleted from the regulations because unrestricted prohibitions on receipt of GTCC LLW are inconsistent with the statutory provisions of the TRCA that authorize TCEQ to license the FWF for disposal of all waste that is the responsibility of the federal government under the LLWPAA.

Finally, the addition of the proposed new subsection (d) to 30 TAC 336.733 is needed in order to provide TCEQ with the framework for conducting a technical analysis to determine whether accepting GTCC LLW or GTCC-like LLW at the FWF, as constructed and operated, would be sufficiently protective of public health and the environment. The proposed amendment would also provide the framework for alternative classification of GTCC-like LLW. The proposed language is modeled after NRC’s regulation governing alternative requirements for waste classification and characteristics, which can be found at 10 C.F.R. § 61.58. This proposed change, along with the others, ensures TCEQ has the flexibility that is authorized by the TRCA.

Statutory Authority for Promulgation of the Proposed Rules

Section 401.412 of the TRCA authorizes the TCEQ to adopt “any rules and guidelines reasonably necessary to exercise” its licensing authority consistent with the policy and purposes of the TRCA. *See also* Tex. Water Code § 5.103. That authority extends to rule changes adopted by the TCEQ related to licensing of the FWF. *See* TRCA §§ 401.051, 401.216.

Injury or Inequity that Could Result from Failure to Implement the Proposed Rules

As noted above, current TCEQ regulatory definitions of “federal facility waste” and “low-level radioactive waste” are inconsistent with the TRCA, and the definition of “transuranic waste” is inconsistent with relevant federal regulations. Further, the blanket prohibition in TCEQ regulations against acceptance of GTCC LLW conflicts with the legislature’s grant of

⁷ NRC does not define the term “transuranic waste” but, instead, uses EPA’s definition. *See* Office of Nuclear Material Safety and Safeguards, U.S. NRC, *Regulating the Disposal of Low-Level Radioactive Waste: A Guide to The Nuclear Regulatory Commission’s 10 CFR Part 61* at 26-27 (Aug. 1989) (available online at <http://pbadupws.nrc.gov/docs/ML1207/ML120720225.pdf>)

⁸ 40 C.F.R. § 191.02(i).

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authority to TCEQ to license a facility for disposal of "federal facility waste," which includes certain GTCC LLW and GTCC-like LLW.

WCS designed and constructed the FWF to be much more robust than the near-surface disposal facilities that existed by the 1980s, when federal regulations were adopted governing land disposal of radioactive waste. In practice, the FWF is an intermediate depth disposal facility in the nature of such facilities contemplated by NRC for disposal of GTCC LLW.⁹ While the TRCA does not mandate that TCEQ license the FWF to accept GTCC LLW or GTCC-like LLW, the TRCA allows TCEQ to do so. TCEQ should adopt the regulatory changes needed to provide the ability to make a fact-based, technologically and scientifically grounded assessment of whether the FWF in Andrews County can safely accept GTCC LLW or GTCC-like LLW.

WCS has discussed the need for disposal options for certain GTCC LLW and GTCC-like LLW with DOE and NRC. DOE has suggested that the FWF in Andrews County may be a viable option for disposal of some DOE GTCC LLW and GTCC-like LLW. Currently, such waste has no disposal pathway. The TRCA provisions concerning the FWF envision a solution to the federal government's LLW disposal problems. If technical analysis reveals that the FWF is a protective disposal option, TCEQ should be consistent with the TRCA and do what is necessary to fulfill the statute's promise.

⁹ See 54 FR 22578.

TCEQ's Authority to License Disposal of GTCC and GTCC-like Federal Facility Waste

This paper highlights the authority of the Texas Commission on Environmental Quality ("TCEQ") under the Texas Radiation Control Act ("TRCA") to license disposal of certain greater than Class C ("GTCC") low-level radioactive waste ("LLW") and "GTCC-like" LLW in the Federal Facility Waste Disposal Facility ("FWF") operated by Waste Control Specialists LLC ("WCS") in Andrews County, Texas. This paper also described the changes to TCEQ's rules that would facilitate the agency's exercise of the authority granted to it by the TRCA.

State Statutory Authority - Federal Facility Waste

The TRCA¹ states, "The commission may license the compact waste disposal facility license holder to dispose of federal facility waste."² The TRCA defines "federal facility waste" as "low-level radioactive waste that is the responsibility of the federal government under the Low-Level Radioactive Waste Policy Act, as amended by the Low-Level Radioactive Waste Policy Amendments Act of 1985 ["LLWPAA"] (42 U.S.C. Sections 2021b-2021j)."³ The LLWPAA, in pertinent part, describes the federal government's responsibility:

- (b)(1) The Federal Government shall be responsible for the disposal of-
 - (A) low-level radioactive waste owned or generated by the Department of Energy;
 - (B) low-level radioactive waste owned or generated by the United States Navy as a result of the decommissioning of vessels of the United States Navy;
 - (C) low-level radioactive waste owned or generated by the Federal Government as a result of any research, development, testing, or production of any atomic weapon; and
 - (D) any other low-level radioactive waste with concentrations of radionuclides that exceed the limits established by the Commission for class C radioactive waste, as defined by section 61.55 of title 10, Code of Federal Regulations, as in effect on January 26, 1983.⁴

The four categories of waste that are the responsibility of the federal government under the LLWPAA include GTCC-like⁵ waste and GTCC waste. As is evident from the plain text of the

¹ Tex. Health & Safety Code Ch. 401 (§§ 401.0005-.522).

² Tex. Health & Safety Code § 401.216.

³ Tex. Health & Safety Code § 401.2005(4).

⁴ Subsection 3(b)(1) of the LLWPAA (42 U.S.C. § 2021c(b)(1)).

⁵ The Department of Energy ("DOE") waste and defense-related waste covered by categories (b)(1)(A)-(C) is not classified according to the same system utilized by NRC. Thus, such waste that has the characteristics of GTCC

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statute, there is no exclusion of any waste based on the concentration levels of radionuclides. Thus, all waste that meets the criteria of Subsection 3(b) of the LLWPAA, regardless of whether that waste is classified as Class A, B, C, or GTCC pursuant to NRC's classification system or considered GTCC-like waste, is the responsibility of the federal government under the LLWPAA. The plain text of the TRCA combined with the plain text of the LLWPAA grants TCEQ the state statutory authority to license disposal of all federal facility waste at the FWF.

TCEQ Regulatory Authority - Federal Facility Waste

TCEQ's current rules restrict the full exercise of the authority granted to TCEQ under the TRCA. Changes to TCEQ's rules are necessary to conform the regulatory definitions to the TRCA and reflect the authority of TCEQ to approve the disposal of GTCC and GTCC-like waste at the FWF consistent with federal law. The changes necessary to TCEQ's rules are as follows:

(1) Delete the exclusion of GTCC LLW from the rules' definition of "federal facility waste."

Unlike the TRCA definition of "federal facility waste,"⁶ the TCEQ regulatory definition states that "low-level radioactive waste that is classified as greater than Class C in § 336.362 of [TCEQ's rules]" is excluded from the definition of "federal facility waste."⁷ In order for TCEQ to analyze a potential request for approval of the disposal of GTCC federal facility waste, the regulatory definition must be aligned with the statutory definition. Removing the exclusion of GTCC LLW from the regulatory definition of "federal facility waste" will not affect the division of authority between TCEQ and NRC. NRC's authority over GTCC LLW is currently acknowledged in Section 336.362 of TCEQ's rules, which states, "Waste that is not generally acceptable for near-surface disposal is waste for which form and disposal methods must be different, and in general more stringent, than those specified for Class C waste. *Disposal of this waste is regulated by the United States Nuclear Regulatory Commission.*"⁸ In order to ensure that NRC understands that harmonizing the TCEQ's definition of "federal facility waste" with the TRCA definition of that term will not affect NRC's jurisdiction in any way, Section 336.362 could be made more specific by stating, "Disposal of low-level radioactive waste exceeding the Class C limitations specified in this section that results from activities licensed by the United States Nuclear Regulatory Commission (NRC) is subject to NRC's authority."

(2) Delete the rules' prohibition on acceptance of GTCC LLW and GTCC-like LLW for disposal.

Subsection 336.701(b) of TCEQ's rules lists categories of waste that a Texas disposal licensee may not accept for disposal. That list covers high-level radioactive waste, certain types of byproduct material, and spent or irradiated nuclear fuel. The list of prohibited waste also includes the "waste that exceeds Class C limitations" and "waste that is not generally acceptable for near surface disposal." These last two categories must be removed from the rules in order for TCEQ to consider the approval of the disposal of GTCC LLW and GTCC-like LLW at the FWF.

LLW is technically not GTCC LLW and is sometimes referred to as "GTCC-like" LLW. Under the LLWPAA, the federal government is responsible for providing for the disposal of GTCC-like LLW.

⁶ Tex. Health & Safety Code § 401.2005(4).

⁷ See 30 Tex. Admin. Code § 336.2(50).

⁸ 30 Tex. Admin. Code § 336.362(a)(2)(D) (emphasis added).

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- (3) *Add a regulatory framework for the performance assessment of disposal of GTCC LLW or GTCC-like LLW at the FWF and a framework to address the GTCC-like LLW that is not technically classified as GTCC LLW.*

Lastly, in order for TCEQ to exercise the full range of flexibility regarding GTCC LLW and GTCC-like LLW disposal authorized by the TRCA, a framework for the consideration and approval of the potential disposal of GTCC LLW or GTCC-like LLW at the FWF is needed. NRC rules contain options for the disposal of GTCC LLW. These rules inform potential changes to the TCEQ's rules that will maintain consistency with federal law.

Section 61.55(a)(2)(iv) of the NRC rules allows approval of the disposal of GTCC LLW in a facility licensed for disposal of other LLW that has been shown through facility-specific analysis to be safe for disposal of GTCC LLW.⁹ NRC recognizes that GTCC LLW may be safely disposed of in facilities such as "intermediate disposal facilities." At the time NRC last amended its rules on disposal of GTCC LLW (in 1989), no intermediate disposal facilities existed, and the precise contours of an "intermediate" disposal facility's design and operations were not fully delineated. However, the design and operation of the FWF in Andrews County is much more stringent than the bare "near-surface disposal" facilities that are acceptable for disposal of LLW Classes A, B, and C under NRC's rules. In 1989, recognizing that an advanced disposal facility like the FWF could eventually be developed, NRC "avoid[ed] foreclosing possible use of intermediate disposal facilities" for GTCC LLW.¹⁰ Further, though "NRC was urged to 'eliminate the option' of disposal [of GTCC LLW] in State or State compact facilities," NRC stated that "[n]o health and safety concerns have been presented that would persuade the Commission to require the use of Federal facilities, to the exclusion of other facilities licensed under the Atomic Energy Act, for the disposal of all GTCC."¹¹ And NRC noted that "the LLWPAA appears to recognize the continued authority of a State, subject to the provisions of its compact, or a compact region, to accept GTCC waste for disposal[.]"¹²

TCEQ can be the licensor for the three categories of federal facility waste covered by Subsection 3(b)(1)(A)-(C) of the LLWPAA. NRC "has no licensing authority over defense LLW, including defense LLW that might be analogous to GTCC waste."¹³ TCEQ's rules should be amended to provide for alternative classification of GTCC-like LLW and mimic the NRC's framework for facility-specific analysis of the safety of disposal of GTCC LLW and GTCC-like waste. This could be accomplished by adopting a regulation similar to Section 61.58 of NRC's rules. Section 61.58 provides, "The Commission may, upon request or on its own initiative, authorize other provisions for the classification and characteristics of waste on a specific basis, if, after evaluation, of the specific characteristics of the waste, disposal site, and method of disposal, it finds reasonable assurance of compliance with the performance objectives in subpart C of this part."

NRC is currently developing its position on whether it must be the licensor for disposal of GTCC LLW within the category of Subparagraph (D) listed above that "results from activities

⁹ See 10 C.F.R. § 61.55(a)(2)(iv).

¹⁰ 54 Fed. Reg. 22579.

¹¹ *Id.*

¹² *Id.*

¹³ 54 Fed. Reg. 22580.

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licensed by [NRC.]”¹⁴ Only a small volume of the waste at issue is commercially generated GTCC LLW, responsibility for disposal of which the LLWPAA assigns to the federal government. Regardless of NRC’s ultimate position on that category of waste, TCEQ can move forward with regulatory amendments to provide the flexibility given by the TRCA.

Classification of Waste Containing Transuranic Elements

Some radioactive waste contains transuranic elements. “Transuranic elements” refers to elements with an atomic number greater than uranium (i.e., more than 92 protons). Under the LLW classification system used by NRC, transuranic elements may be present in all classes of LLW.¹⁵

As a general rule, if waste contains “more than 100 nanocuries of alpha-emitting transuranic isotopes, with half-lives greater than twenty years, per gram of waste,” it is considered to be “transuranic radioactive waste” (also known as “TRU waste”) subject to the regulation of the U.S. Environmental Protection Agency (“EPA”) under Part 191 of Title 40 of the Code of Federal Regulations. This general rule is subject to two exceptions, however. First, the term “low-level radioactive waste,” as used in the LLWPAA, includes TRU waste.¹⁶ Thus, statutory authority exists within the TRCA for TCEQ licensing of disposal of TRU waste because the TRCA definition of “federal facility waste” encompasses all LLW that is the responsibility of the federal government under the LLWPAA.

¹⁴ See 42 U.S.C. § 2021c(b)(2).

¹⁵ See, e.g., 10 C.F.R. § 61.55(a)(3); Office of Nuclear Material Safety and Safeguards, U.S. NRC, *Regulating the Disposal of Low-Level Radioactive Waste: A Guide to The Nuclear Regulatory Commission’s 10 CFR Part 61* at 21-22 (Aug. 1989) (available online at <http://pbdupws.nrc.gov/docs/ML1207/ML120720225.pdf>).

¹⁶ The LLWPAA defines “low-level radioactive waste” as follows:

(9) Low-level radioactive waste

(A) In general

The term “low-level radioactive waste” means radioactive material that--

- (i) is not high-level radioactive waste, spent nuclear fuel, or byproduct material (as defined in section 2014(e)(2) of this title); and
- (ii) the Nuclear Regulatory Commission, consistent with existing law and in accordance with paragraph (A), classifies as low-level radioactive waste.

(B) Exclusion

The term “low-level radioactive waste” does not include byproduct material (as defined in paragraphs (3) and (4) of section 2014(e) of this title).

42 U.S.C. § 2021b(9).

The current definition of “low-level radioactive waste” in the LLWPAA replaces a different definition contained in the original Low-Level Radioactive Waste Policy Act (passed in 1980). The original definition did expressly exclude transuranic waste from the term “low-level radioactive waste.” When Congress replaced the original act in 1985 with the LLWPAA, transuranic waste was included in “low-level radioactive waste” in part to ensure that the federal government would be responsible for its disposal. “Since the Public Law addresses only LLW, unless GTCC TRU was defined as LLW, (rather than as a separate category as it had been in the 1982 [Nuclear Waste Policy Act]) it would remain an orphan category with neither the states nor the federal government responsible for its disposal.” National Governor’s Association Center for Policy Research, *Low-Level Waste Handbook, A User’s Guide to the Low-Level Radioactive Waste Amendments Act of 1985* at 7.

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Second, EPA's definition of "transuranic radioactive waste" allows a case-by-case determination to be made that certain "transuranic waste" need not be managed as TRU waste because "the Department [of Energy] has determined, with the concurrence of the Administrator [of EPA], [that the waste does] not need the degree of isolation required by [Part 191 of EPA's rules]" or "the [Nuclear Regulatory] Commission has approved [the waste] for disposal on a case-by-case basis in accordance with 10 CFR Part 61."¹⁷ Thus, waste "containing more than 100 nanocuries of alpha-emitting transuranic isotopes, with half-lives greater than twenty years, per gram of waste" that fits within the exceptions of EPA's definition is LLW (instead of "transuranic radioactive waste").

In light of EPA's definition of "transuranic radioactive waste," classification of certain wastes or types of wastes that were at one time considered TRU waste may change. Waste that at one time was TRU waste may become simply GTCC waste. In addition to having statutory authority for the disposal of TRU waste by virtue of the definition of "low-level radioactive waste" in the LLWPAA, TCEQ is empowered by the TRCA to authorize disposal of waste that was previously considered TRU waste but that has become GTCC LLW pursuant to EPA's definition of "transuranic radioactive waste."¹⁸

Though TCEQ has state statutory authority to authorize disposal of federal facility TRU waste and LLW that has been reclassified from TRU waste to simply GTCC LLW, certain TCEQ rules stop the agency short of its full statutory authority. TCEQ's regulatory definition of "low-level radioactive waste," unlike the statutory TRCA definition of that term, expressly excludes "transuranic waste" from "low-level radioactive waste."¹⁹ Because the TCEQ regulations use the regulatory definition of "low-level radioactive waste" in all the provisions governing disposal at the FWF, the regulatory definition limits TCEQ's flexibility under the TRCA to authorize disposal of federal facility TRU waste.

Additionally, TCEQ's regulatory definition of "transuranic waste" differs in important ways from EPA's definition of "transuranic radioactive waste."²⁰ TCEQ's rules define "transuranic waste" as "wastes containing alpha emitting transuranic radionuclides with a half-life greater than five years at concentrations greater than 100 nanocuries/gram."²¹ However, as

¹⁷ 40 C.F.R. § 191.02(i).

¹⁸ The federal Waste Isolation Pilot Plant Land Withdrawal Act, P.L. 102-579, as amended by P.L. 104-201, contains a definition of "transuranic waste" that is almost identical to EPA's definition of "transuranic radioactive waste." The Act, adopted after EPA established its definition of TRU waste, is evidence that Congress approved of the framework for excepting from "transuranic waste" any waste that "the Secretary [of Energy] has determined, with the concurrence of the Administrator [of EPA], does not need the degree of isolation required by the disposal regulations" and "waste that the Nuclear Regulatory Commission has approved for disposal on a case-by-case basis in accordance with part 61 of title 10, Code of Federal Regulations." See Section 2(18) of the Act. Additionally, although the Waste Isolation Pilot Plant ("WIPP") was created specifically as a disposal solution for defense-related TRU waste, the Act's definition of "transuranic waste" and the Act as a whole makes clear that WIPP is not the exclusive disposal site for TRU waste or waste that was at one time considered TRU waste. Other disposal sites may serve as a solution for such waste.

¹⁹ Compare 30 Tex. Admin. Code § 336.2(77) with Tex. Health & Safety Code § 401.004.

²⁰ NRC has not specifically defined the term "transuranic waste," but use of that term in NRC's regulations is intended to reference EPA's definition. See Office of Nuclear Material Safety and Safeguards, U.S. NRC, *Regulating the Disposal of Low-Level Radioactive Waste: A Guide to The Nuclear Regulatory Commission's 10 CFR Part 61* at 26-27 (Aug. 1989) (available online at <http://pbadupws.nrc.gov/docs/ML1207/ML120720225.pdf>)

²¹ 30 Tex. Admin. Code § 336.2(141).

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noted above, EPA's definition carves out wastes that DOE with EPA determines do not need the same degree of isolation as required for spent nuclear fuel and high-level radioactive waste. And EPA's definition carves out wastes that NRC has approved for disposal in accordance with NRC's rules on land disposal of radioactive waste. For TCEQ to have the flexibility to license acceptance of waste that was at one time considered TRU waste but has since been reclassified as GTCC LLW, TCEQ's definition of "transuranic waste" should be changed to mimic EPA's definition.

Conclusion

TCEQ currently possesses the authority under state and federal law to authorize the disposal of GTCC LLW and GTCC-like LLW in the FWF operated by WCS. However, changes to TCEQ rules are needed for TCEQ to exercise its authority. Also, there is a limited subset of GTCC LLW that TCEQ is authorized to regulate under state law but that NRC may assert is within the exclusive jurisdiction of NRC under federal law. Additional coordination with NRC is needed concerning that subset of GTCC LLW (specifically, GTCC LLW that fits within the category of Subsection 3(b)(1)(D) of the LLWPAA and results from activity licensed by NRC). Regardless of the status of that subset of waste, TCEQ should move forward with rule changes that provide it with the flexibility contemplated by the TRCA to license disposal of the federal facility waste that is unquestionably within TCEQ's jurisdiction.