Concentration Averaging: A State Perspective

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Disclaimer:

I am the Chair of the Utah Radiation Control Board and a Full-time employee of the University of Utah. My comments today represent my experiences, observations and opinions and do not reflect the policies or opinions of neither the Utah Radiation Control Board nor the University of Utah. I have not been authorized to speak on behalf of the Control Board or the Utah Division of Radiation Control.

The Utah Perspective

- Site of Privately Owned and Operated LLRW Facility on Private Land
- Legislative limit on other than Class A waste
- Radiation Control Board Policies:
  - Waste Classification
  - Down-Blending of Waste
  - "Health and Safety" perspective
- "Current" BTP License requirement for WAC

Utah Legislative Limit on Waste Disposal

19-3-103.7. Prohibition of certain radioactive wastes.

No entity may accept in the state or apply for a license to accept in the state for commercial storage, decay in storage, treatment, incineration, or disposal:

(1) class B or class C low-level radioactive waste; or

(2) radioactive waste having a higher radionuclide concentration than the highest radionuclide concentration allowed under licenses existing on February 25, 2005, that have met all the requirements of Section 19-3-105.

Class B/C Ban

- Not based on specific health or safety issue
- Public-driven policy
  - Education—Keep out "hotter" waste
  - Perception—Tourist destination, outdoor lifestyle
  - Trust—Fraud/Tax Evasion convictions
- Other potential private licensees

Utah Radiation Control Board Policy Maintaining Waste Classification

It is the policy of the Utah Radiation Control Board that the radioactive waste classification system be maintained, and that activities of licensees be consistent with maintaining radioactive waste classification categories. As changes in the classification are proposed, activities of licensees should remain consistent with promulgated classification rules.

(UT RCB Policy, 4/13/2010)

UT RCB Position Statement on Down-Blending Radioactive Waste

The RCB recognizes that down-blended waste :

- "…does not pose any unique health and safety issues to the public that are not observed in other classes of low-level radioactive waste."
- "…may appear to some as a process to circumvent Utah law"
- "…to maintain public confidence in the regulatory process and to protect against unforeseen hazards"
- "…opposed to waste blending when the intent is to alter the waste classification for the purposes of disposal site access."

- "Dilution of radioactive wastes with uncontaminated materials should be explicitly prohibited. "
- "Current guidance documents dealing with concentration averaging and mixing should be updated…"
- "Important matters dealing with waste blending, such as prohibition of certain practices, currently in guidance should be put into regulation."

(UT RCB policy, 4/13/2010)

UT RCB "Health and Safety" Approach

- Policy when dealing with vaguely or undefined issues
  - "Alternate Feed Material", "Bulk DU", Blending, etc
  - R313-25-8 Technical Analyses: requires PA before acceptance of certain wastes
    - Not considered in 1981 Draft EIS of 10 CFR 61
    - > 10% R313-25-19 dose limit at time of peak dose
    - > 10% site source term
    - Unanalyzed condition
- Generally consistent with risk-informed, performance-based approach

License Requirements

- EnergySolutions License UT2300249, Ammendment #14, Condition 16L:
- The Licensee shall not accept containerized radioactive waste unless each waste package has been:
- i. Classified in accordance with R313-15-1009, "Classification and Characteristics of Low-Level Radioactive Waste." In addition, the Licensee shall require that all radioactive waste received for disposal meet the requirements specified in the Nuclear Regulatory Commission, "Branch Technical Position on Concentration Averaging and Encapsulation", as amended.

Recent Issues affected by CA BTP

- Large-Scale Blending:

- "…in SECY-10-0043 (NRC 2010), the staff noted that large-scale blending of Class B and Class C concentrations of LLW with Class A to produce a Class A mixture could result in doses to an inadvertent intruder that are above 5 mSv/yr (500 mrem/yr)…"

  ("Technical Basis for Proposed Rule to Amend 10 CFR Part 61 to Specify Requirements for the Disposal of Unique Waste Streams, Including Large Quantities of Depleted Uranium (FSME-1-XXXX), (ML111040419))

- "…because the requirement to conduct a site specific inadvertent intruder analysis is not specifically identified in 10 CFR Part 61 and may not be well understood, there is a concern that applicants or licensees could misinterpret the regulations to only require compliance with the concentration limits in the waste classification tables for ensuring protection of the intruder, as required by 10 CFR § 61.42. As a result, there is a concern that disposal of a significant amount of waste at the Class A disposal limit under the minimal disposal requirements for Class A waste imposed by 10 CFR 61 could cause an unacceptable dose to an inadvertent intruder."

  (SECY-10-0043 (NRC 2010))

Is Blending Consistent with UT Rule?

Subject: IMPORTANT - IMPORTANT
Importance: High

IMPORTANT UPDATE - PLEASE TREAT AS **CONFIDENTIAL**

EnergySolutions is on the tour.... They are going around giving their "ResinSolutions" presentations for post 2008 Barnwell closure. Key Points. Remember this is Post 2008 but are discussing "ramp-up" timing before June 30th 2008.

- Resin Dilution - Taking everyone's Class-A/B/C "resins" and then using their large volumes of Class-A "resins" and using that to dilute the Class-B/C into Class-A.
  - Telling Clients that this can be done within the present BTP Concentration Averaging clause (because of the "like" waste and the "large" volumes, including the large volume from the blow-down/secondary type resin markets).
  - Continue to generate liners as you do now (Class-A, B, or C etc.).
  - Continue using Reusable Containers.
  - Keep the waste "hydrated".
  - Ship resin liners to Oak Ridge. All processing/waste class managing will be done in Oak Ridge.
- Industry Backed - Telling Clients (or implying) that this approached is supported by NEI and EPRI.
- NEI - has meet with utility reps and NRC (remember ***Steve Creamer*** is on the board of NEI now). NRC is willing to listen to options if NEI and EPRI submit recommendations that do not involve revising Part 61, but only involve revisions to "guidance documents" (as in the BTP). Options to allow a broader range of Concentration Averaging that fits the above concept that will be authorized blending to be done on-site at the generator or off-site at a processor or burial site.

Under this approach there will be a good probability that the resultant Class-A resin will be at the top end of "A" with zero room for volume reduction due to kicking it out of "A".

- Blending to gain access to Waste Facility?
- Done to circumvent UT Law?
- Covered under current PA for site?
- What are reasonable PA criteria?

General Concerns with CA BTP

- Is UT ban on B/C waste compatible with risk-informed, performance-based approach?
  - Could "acceptable hazard" (61.7(5)) exceed Class A level?
- No UT equivalent to 61.58 Alternative Requirements for Classification.
  - "…waste that contains Class B concentrations…could be disposed in a Class A disposal cell…"

General Concerns with CA BTP

- UT may need additional regulation to guide classification under risk-informed, performance-based approach.
- Waste Classification through WAC?
- UT DRC reliance on Guidance for regulating Licensees

Summary

- CA BTP More Clear, Usable
- Risk-informed, Performance-based Approach generally consistent with UT RCB Perspective
- Concern how UT ban on B/C waste will be affected
- UT relies on NRC Guidance to regulate activities, some Guidance may be inconsistent with UT Law