

# PUBLIC SUBMISSION

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**Docket:** NRC-2011-0022  
Potential Revision of the Branch Technical Position on Concentration Averaging and Encapsulation

**Comment On:** NRC-2011-0022-0015  
Branch Technical Position on Concentration Averaging and Encapsulation

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## General Comment

See attached file(s)

## Attachments

UT DRC Comments Draft CAE BTP Rev1 2012May

*SUNSI Review Complete  
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(SEK4)*



October 8, 2012

*Submitted electronically via [www.regulations.gov](http://www.regulations.gov)*

**Subject: Comments on Docket ID NRC-2011-0022**

Thank you for the opportunity to submit comments on proposed changes to the *Branch Technical Position on Concentration Averaging and Encapsulation* (BTP). Without being able to comment on all of the proposed changes relative to the 1995 version, we wish to object, wholesale, to all changes that allow wastes with higher radionuclide concentrations than currently allowed to come to Utah as Class A waste. We believe that much of the motivation behind revising the BTP lies in the desire for generators in the rest of the country to send additional waste streams to Utah, thus forestalling the need to open new regional nuclear waste disposal sites to take locally-generated waste. We also suggest that the recent opening of the Texas Waste Control Specialists site to Class B and C out-of-compact wastes has obviated much of the perceived need to re-write the BTP to send higher radionuclide concentration waste to Utah.

Having made that general comment, we wish to submit the following specific comments below.

**1. Selection of inadvertent intruder exposure scenarios**

The relevant performance objective reads:

**§ 61.42 Protection of individuals from inadvertent intrusion.**

Design, operation, and closure of the land disposal facility must ensure protection of any individual inadvertently intruding into the disposal site and occupying the site or contacting the waste at any time after active institutional controls over the disposal site are removed. (underline added)

Federal regulation protects individuals from "contacting the waste" after active institutional controls are removed.

For this reason, we believe that the inadvertent intruder exposure scenario must envision someone coming into direct contact with waste; for instance, a well driller or other similar scenario.

We strongly believe that any attempt to either a) assume that there is no scenario under which an individual could come into direct contact with the waste, or b) assign large



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probabilities to intruder events *not* happening violates the inadvertent intruder performance objective.

## **2. Other ACRS recommendations and issues**

### *A. Blended Waste*

Specifically allowing waste blending in the Branch Technical Position is an unwarranted reversal of prior policy that advised against waste blending for the purpose of intentionally reducing the waste classification; furthermore, waste blending is an enterprise wholly undertaken as a means to get around Utah's ban on Class B and C radioactive waste.

*B. Allowing for reliance on perpetual care funds for institutional controls to prevent or mitigate the impacts of inadvertent intrusion and using probability of intrusion in developing averaging positions.*

We believe that the institutional control period of 100 years should not be lengthened under any circumstance. The availability of money today -- for instance, in the form of a perpetual care fund -- does not on its own constitute reasonable assurance of adequate and active institutional controls 100 or more years from today. For instance, funds can be raided for other purposes.

In fact, we believe there are many real-world examples that show loss of institutional controls in fewer than 100 years. If anything, assuming that institutional controls can adequately protect from inadvertent intrusion for 100 years is generous and optimistic.

As stated earlier, we believe that "using probability of intrusion" to relax physical safeguards and precautions violates the inadvertent intruder performance objective. This performance objective specifically protects an individual who unknowingly comes into contact with waste after the institutional control period. This protection cannot be "assumed away" by simply stating that all "direct contact" scenarios are unlikely.

## **3. Classification of cartridge filters as a homogeneous waste**

As a general rule, since homogenous wastes are subjected to less stringent averaging constraints, we believe that only obviously homogenous wastes should qualify as "homogenous." Since cartridge filters consist of robust metal housings, we believe that they should continue to be classified as discrete wastes.

## **4. Homogeneity Test for Mixable Wastes - Unenforceability**



While we continue to stridently disagree with the rationale for intentionally blending waste to reduce waste classification, we commend the NRC staff for at least recommending that waste homogeneity for mixable (i.e., blended) wastes be tested.

Unfortunately, there are several practical impediments to the staff's two recommended tests, both related to the practice of "retribution" of waste by waste processors.

Recently, the Utah Division of Radiation Control was audited by the Utah Office of the Legislative Auditor General (dated September 2012 and available online at: [http://le.utah.gov/audit/12\\_10rpt.pdf](http://le.utah.gov/audit/12_10rpt.pdf)) . Among the various findings was one related to retribution of waste by waste processors. Although the Utah auditors focus on the risk of receiving foreign waste, we believe this line of observation also applies to blended wastes; we quote at length:

**Vertical Integration and Retribution of Waste Conceals Origins of Waste**

As discussed in Chapter I, Utah's radioactive disposal site is unique in that a private, vertically integrated company owns and operates the site. Thus, we believe greater validation from the DRC is essential to ensure that banned waste streams are not being disposed of at the Clive facility. Vertical integration<sup>14</sup> allows EnergySolutions a great deal of control over how to manage its waste without disclosing the origin of the waste. EnergySolutions is allowed to receive waste from generators out of state and retribute it as if it was the original generator. This should be a concern to the DRC from an oversight perspective, because the original character (make-up or content) of the waste stream may change during processing, and the identity of the original generator is generally undisclosed.

During the audit, EnergySolutions restricted our access to some records and staff. We also did not have access to EnergySolutions' company partners out of state, specifically in Tennessee. Therefore, we were unable to test whether certain waste streams were traceable to a generator of origin. Further, we were unable to validate if any prohibited waste, such as foreign waste, was returned to the generator because it is not allowed to be disposed of at the Clive facility. Figure 2.5 shows the two main ways by which radioactive waste is received for disposal at Clive.

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[T]he greatest risk lies with the waste stream processed through brokers/processors owned or partnered by EnergySolutions because reattributed waste blinds the DRC to waste origins. Though EnergySolutions only brings in 11 percent of the waste volume disposed of at Clive, those shipments account for the majority of the millicuries received for disposal.

EnergySolutions' involvement in the waste from generation to disposal can be similar to the circumvention of a financial control. Financial controls rely on principles like segregation of duties, proper authorization, adequate documentation, and independent verification. For example, independent verification occurs when an independent person (perhaps a manager) at a retail store compares the cash register logs to the cash in the register and bank deposits. In this scenario, the manager ensures that all cash received into the register from sales was correctly accounted for. We believe that the DRC needs to be more involved in independent verification to ensure that incoming waste is allowed for disposal in the state and is correctly accounted for.

Another troubling issue is that the Tennessee regulators are not required to validate any waste streams leaving their state, which places more responsibility on the shoulders of the DRC to ensure that waste sent to Utah is acceptable. We believe that the DRC needs to fulfill the role of independent verification of incoming waste. As mentioned previously, the DRC currently has given responsibility for verification of incoming waste classification entirely to EnergySolutions. (pp. 24-27)

To summarize: The process of waste reattribution effectively blinds Utah state regulators as to the origin, radionuclide constituents, and classification of the various "influents" into blended waste packages that ultimately arrive in Utah for disposal.

Therefore, it would be impossible for Utah regulators to independently verify or conduct the NRC's first proposed test, to determine whether an influent into the blended waste package was within 10 or 100 times the Class A limit.

The second test proposed by NRC has to do with limiting the size of "hot spots" by demonstrating that, "the waste does not contain pockets larger than 0.15 m<sup>3</sup> (5 ft<sup>3</sup>) with a sum of fractions greater than 10"; the BTP further states that, "In general, homogeneity demonstrations may be based on process knowledge, reasoned conclusions, or direct measurements (e.g., by samples or surveys)."

However, as stated before, Utah regulators currently have no access to process documents or manifests held by waste processors (typically located in Tennessee), let alone the ability



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to perform direct measurements by samples or surveys, on blended waste packages. Tennessee regulators do have access to the various manifests and documents and could perform samples and surveys; however, they have no mandate to do so. Furthermore, Utah is where the waste will ultimately be disposed and where inadvertent intruder incidents might occur, and therefore Utah regulators are the natural not have a mandate to adequately assure that proper procedures are followed with regard to the homogeneity tests proposed, it is also true that Utah is where dis

In light of these practical flaws, and because of the availability of Class B and C waste disposal, we believe the practice of waste blending should be specifically prohibited. We furthermore recommend that the process of waste reattribution be further scrutinized and perhaps drastically limited, in order to ensure greater control of processed waste.

Please feel free to contact me if you have any further questions.

Sincerely,

Christopher Thomas  
Executive Director  
HEAL Utah  
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