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**Subject:** Comments on Revision 15 of NUREG-1307, "Report on Waste Burial Charges: Changes in Decommissioning Waste Disposal Costs at Low-Level Waste Burial Facilities" (Docket ID: NRC-2010-0362)

**Project Code:** 689

Dear Ms. Bladey:

LLW disposal fees and LLW processing fees are a major factor in the LLW Burial Index component of the Minimum Amount formula. Licensees, therefore, should have the opportunity to select an option that both reflects the disposal and processing fees that will be available to them in proportion to their expected waste streams.

The current reality is that most licensees that do not have access to compact-specific LLW disposal facilities will most likely ship their Class A waste to the EnergySolutions disposal facility at Clive, Utah; and their Class B & C waste to the Waste Control Specialists (WCS) disposal facility in Andrews County, Texas, or to a waste processing vendor. So it follows that the B<sub>x</sub> Values for Generic LLW Disposal Site should reflect the disposal rates from those facilities.

The B<sub>x</sub> Values for all of the LLW Disposal sites should also reflect the expected composition and volumes of the waste streams from representative licensee facilities. In the November 7 public meeting, the industry argued that the 60/40 split between Class A materials that would receive direct disposal and Class B & C materials that would receive waste treatment significantly overstated the waste processor component. I agree. The composition and volumes of the waste streams that were provided in Table A-4 of the draft Revision 15 to NUREG-1307 are severely outdated. I believe the 95/5 ratio recommended by the industry is a much more accurate representation of actual decommissioning waste streams. However, I believe that many of the estimated volumes provided in Table A-4 are unrealistically low.

A case in point is the estimated Diablo Canyon LLW volumes. The notion that each of the Diablo Canyon units will generate no more than 124,000 cubic feet of Class A waste for direct disposal and 0 cubic feet of waste for processing is simply preposterous. The 2009 decommissioning cost estimates for Diablo Canyon Units 1 and 2 included approximately 150,000 cubic feet of Class A waste for direct disposal and 400,000 cubic feet of waste for processing -- per unit. The LLW volumes in the 2012 Diablo Canyon decommissioning cost estimates are likely to be even higher.

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San Onofre Unit 1 is another example in which the original estimate of Class A LLW volumes was substantially underestimated. The 1998 San Onofre Unit 1 decommissioning cost study estimated that less than 73,000 cubic feet of Class A LLW would be generated by that project. After decommissioning commenced in 1999, the decommissioning agent developed engineered plans for each major project activity. In 2002, these engineered plans estimated that the project would generate approximately 766,000 cubic feet of Class A LLW, assuming a packaging density of 120 pounds per cubic foot. As of January 1, 2009, the San Onofre Unit 1 decommissioning project had shipped well over 1,000,000 cubic feet of Class A LLW to the Clive disposal facility, and the project is still not complete. Admittedly, San Onofre is an outlier compared to most other licensee facilities due to its unique site lease contract with the U.S. Navy Department that requires the removal of all materials from the site, including below-grade foundations. However, San Onofre learned that there is a significant difference between the calculated volumes of intact "as built" plant structures, and the actual volumes of materials that the licensee must pay to dispose of after the solid structures are demolished and packaged for shipment.

Another example of this is the Zion Solutions decommissioning project. I recently toured that facility in conjunction with the October 2012 LLW Forum meeting in Chicago. The Zion radwaste shipping manager stated that they projected that their two-unit project would generate approximately 3,500,000 cubic feet of LLW. I would agree that Zion is also a significant outlier compared to most facilities, however, it nevertheless serves to illustrate that many of the volumes provided in Table A-4 are simply not realistic.

In the November 7 conference call, I observed that benchmarking performed by the San Onofre decommissioning agent during the late 1990's demonstrated that the original cost estimates for many of the decommissioning projects that were in progress at that time substantially underestimated their costs. Another industry representative commented that subsequent benchmarking showed that some projects were completed within their original estimates. I can neither confirm nor deny that assertion. However, it has also been recognized within the industry that increased LLW volumes have been offset by lower than originally estimated LLW disposal rates due to the Clive facility becoming available within the past 10-12 years. So, if radiological decommissioning costs are to be estimated with any degree of accuracy, it is necessary to base the estimates on more realistic estimates of LLW volumes, which have increased, along with current LLW disposal rates, which have decreased.

It is my understanding that the EPRI reports for completed decommissioning projects provide objective quantifications of the volumes and compositions of LLW streams from those projects. In addition, the EPRI report for the San Onofre Unit 1 decommissioning project provides a detailed discussion regarding factors that contributed to the increases in its LLW volumes.

So, in summary, I recommend that the B<sub>x</sub> Values for Generic LLW Disposal Site should be revised to reflect the disposal and waste processor rates that are currently available to licensees that are not required to ship their waste streams to compact disposal facilities, and projected waste stream compositions, as follows:

#### Direct Disposal

Class A	95%	EnergySolutions, Clive, Utah Rates
Class B & C	05%	WCS Texas Rates (although higher than Barnwell rates, WCS Texas rates are now the only rates that are available to most generators)

**Direct Disposal with Vendor**

Class A 95%

Class B &amp; C 05%

EnergySolutions, Clive, Utah Rates

Develop a composite rate based on actual waste processor rates. It would seem that processor rates should be near or slightly below Barnwell B&C rates. If Barnwell rates are the best proxy available, then they should be clearly qualified as a proxy.

However, the B, factors should also be calibrated to reflect more realistic waste volumes based on the experiences of completed decommissioning projects.



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