

# WASTE CONTROL SPECIALISTS LLC

June 10, 2010

Ms. Annette L. Vietti-Cook, Secretary  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

- References:
- (1) Texas Radioactive Material License No. R04100, Amendment 01
  - (2) Letter from J. Scott Kirk, CHP (WCS), to Michael T. Lesar (NRC), *Additional Comments Regarding Waste Blending*, dated January 29, 2010
  - (3) Letter from J. Scott Kirk, CHP (WCS), to Larry M. Camper (NRC), *Supplemental Information Regarding Potential Radiological Impacts to an Intruder Resident from Blended Low-Level Radioactive Waste*, dated January 8, 2010

**Subject: NRC Commissioners' Briefing Regarding Waste Blending (SECY-10-0043)**

Dear Ms. Vietti-Cook:

Waste Control Specialists LLC (WCS) is pleased to be invited to participate in the June 17, 2010, public meeting to share our thoughts regarding blending of Low-Level Radioactive Waste (LLW). We have reviewed staff's analysis in SECY-10-0043 and agree with their recommended Option 2—with one exception. Rather than allow large-scale commercial downblending to proceed in parallel with the rulemaking, in accordance with interim guidance staff would promulgate, we recommend the long-established, industry-accepted policy prohibiting intentional downblending for purposes of changing waste classification be preserved until (1) the U.S. Nuclear Regulatory Commission's (NRC's) rulemaking process is completed and (2) compatible Agreement State regulations are issued and effective. This approach would have many benefits, including:

- Ensuring the controversial issue of downblending is addressed only through a deliberate, public, open, and transparent process that provides for full stakeholder input, and that examines and resolves not just the safety, environmental, interstate commerce, and public perception issues associated with downblending, but also the "unintended consequences" the proposal would create.

*Corporate*  
5430 LBJ Freeway, Ste. 1700  
Three Lincoln Centre  
Dallas, TX 75240  
Ph. 972.715.9800  
Fx. 972.448.1419

*Facility*  
P.O. Box 1129  
Andrews, TX 79714  
Ph. 888.789.2783  
Fx. 575.394.3427

- Preserving the *de facto* technical basis of Title 10 of the U.S. Code of Federal Regulations, Part 61 (10 CFR 61), which relies on waste streams that are similar to those that existed at the time that rule was promulgated, and have not been artificially manipulated (as by intentional downblending).
- Preserving the well known regulatory paradigm established by the NRC's 1981 *Policy Statement on Low-Level Waste Volume Reduction* and the 1995 *Final Branch Technical Position on Concentration Averaging and Encapsulation* ("BTP"), and reiterated as recently as October 2006 in staff correspondence to the ALARON Corporation.<sup>1</sup>
- Avoiding the perception of conduct that is "disingenuous," "tomfoolery," and "a shell game," as one commenter remarked at the January 14, 2010, stakeholder meeting, which may erode public confidence in the agency in the long term.
- Comporting with a standard of fairness that urges that changes to long-established agency interpretations of its rules, that are well accepted and form the basis for substantial investments in the regulated community, not be changed except through notice-and-comment rulemaking.<sup>2</sup>
- Ensuring harmonization of Agreement State implementing regulations, which can only be accomplished through a rulemaking (with appropriate compatibility requirements), and cannot be accomplished through guidance, including especially interim guidance, which Agreement States need not follow.

We offer the Commissioners our insights on this matter, as expressed herein, to assist in shaping this proposed change in radioactive waste management policy—a change that will affect national stakeholders for decades to come.

## **INTRUDER ANALYSIS**

At the NRC stakeholder meetings held in December 2009, the NRC acknowledged that an analysis had not been performed to assess the radiological impacts to an inadvertent intruder resident from the disposal of waste blended to the upper bound of the Class A limits after expiration of institutional controls in 100 years. During the rulemaking for 10 CFR 61, the NRC established limits for Class A waste based on the typical waste streams and waste forms that were being generated at that time (1981). The Environmental Impact Statement (EIS) supporting that rulemaking was also silent on the radiological impacts to an intruder for waste streams at the upper end of the Class A limits.

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<sup>1</sup> Letter from John D. Kinneman (NRC) to Joseph Harverson (President, ALARON Corporation) dated October 16, 2006.

<sup>2</sup> See, e.g., *Alaska Professional Hunters Association, Inc. v. Federal Aviation Administration*, 177 F.3d 1030 (D.C. Cir. 1999).

In our January 8, 2010, letter to the NRC (Reference 3), WCS submitted an analysis of the potential radiological impacts to an intruder-agriculture scenario (referenced henceforth as the “intruder resident”) to supplement comments previously submitted to the Commission on the proposed policy change. The analysis was performed following the guidance contained in NUREG/CR-4370, *Update of Part 61 Impacts Analysis*, for a “generic” site in a risk-informed manner. It was assumed that disposal of waste blended to the upper end of the Class A limits at a generic site only had to comply with the minimum requirements for disposing of Class A LLW. That is, no credit was given for controls for structural stability or measures intended to protect an intruder, as these controls are not required by regulation for disposal of Class A LLW. This conservative approach is appropriate when considering potential changes to the BTP because waste blended to the upper end of the Class A limits is intended to be treated as any other Class A waste.

WCS shared its views pertaining to the intruder analysis and other aspects of waste blending with Commissioners Magwood and Ostendorff, as well as other NRC staff, during a site visit on May 18, 2010. WCS indicated that the estimated doses were unacceptably high—as high as 46,600 millirem per year 100 years after expiration of institutional controls or 466 times in excess of the dose limits for members of public specified in 10 CFR 20.1301 (See Reference 3). At the meeting during the site visit, NRC staff acknowledged that an independent review of WCS’ intruder analysis had been performed. The staff agreed that the guidance had been properly followed and the estimated radiation doses were correctly calculated.

### **UNREVIEWED SAFETY QUESTION FOR A GENERIC SITE ANALYSIS**

Radiological consequences of this magnitude arise from the manner in which the original analysis underlying 10 CFR 61 was conducted. When the regulation was first issued, the NRC did not consider all radionuclides at the upper thresholds of the waste classifications in 10 CFR 61.55. Instead, the NRC evaluated typical wastes and waste forms that were being generated at the time. Therefore, dilution of higher classification wastes to the upper bound of the Class A limits, on a large scale that is now under consideration by the NRC, was not analyzed when this regulation was first promulgated. The analysis performed by WCS underscores the point that waste at the upper end of the Class A limits may not be safely disposed of in Class A disposal sites without requiring additional controls for structural stability and intruder protection. Such controls are currently not required under 10 CFR 61, and the waste classification tables by themselves—i.e., without the proscription against blending currently contained in the BTP—do not provide adequate assurances to protect public health or the environment now or in the future.

At the direction of the Commissioners, the NRC staff is preparing a rulemaking to consider additional requirements that may be necessary to ensure that unique waste streams, such as large quantities of depleted uranium (DU), may be safely disposed of as Class A, B, or C LLW. The Commissioners’ directive was based in part on the fact that disposal of large quantities of DU was not analyzed during the initial rulemaking for 10 CFR 61 (i.e., the disposal of large quantities of DU constituted an Unreviewed Safety Question [USQ]).

The results of WCS' radiological analysis related to blending raises concerns similar to those related to disposing of large quantities of DU, since "blending" on the scale contemplated has also never before been analyzed by the NRC. Such an analysis could identify additional regulatory requirements needed to protect a future inadvertent intruder resident from potential exposures to high doses of radiation. Such requirements may include similar or identical regulatory controls to those currently mandated for disposal of Class B/C LLW—requirements that could only be enforceable through a rulemaking with strict compatibility requirements for Agreement States hosting a disposal facility. For the reasons stated above, WCS strongly agrees with the NRC staff's recommendation to mandate that an intruder analysis be performed either as part of the rulemaking for unique waste streams or as part of the overhaul to 10 CFR 61 expected to begin sometime in 2011.

### **CONTROLS NEEDED TO PROTECT PUBLIC HEALTH AND ENSURE HOMOGENEITY**

During the stakeholder meetings held in December 2009 and January 2010, as well as in correspondence with WCS and other stakeholders, NRC staff reiterated that the regulated community is only compelled to abide by regulations, and not by regulatory guidance or policy. WCS' intruder analysis strongly suggests that the NRC take a hard look at the additional controls that must be required by rulemaking (not guidance) to reduce the likelihood of a future intruder resident from incurring such high radiological consequences. The rulemaking should require the same controls for waste blended at the upper bound of the Class A limits to ensure stability and intruder protection as those currently mandated for Class B/C LLW. Additionally, a qualification and testing criteria<sup>3</sup> that currently only apply to Class B/C LLW must also be stipulated for LLW blended to the upper end of the Class A limits to ensure that any such controls will be able to perform their intended function for as long as the radiation doses remaining unacceptably high.

Currently, the regulated community must ensure that final waste stream is relative homogenous only through guidance. WCS disagrees with the staff that the requirements for mandating homogeneity and any associated sampling requirements could be adequately controlled by issuance of guidance. Any such requirements would require a rulemaking to ensure consistent and uniform implementation by both licensees and Agreement States hosting disposal facilities. Should NRC elect to establish such controls or practices only via guidance and not in

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<sup>3</sup> Currently, the licensed community relies on information contained in the Waste Form Technical Position, Revision 1 (January 1991). This Technical Position Paper specified certain criteria needed to provide suitable controls to ensure stability for Class B/C LLW.

It also noted that Class A LLW does not require the same level of stabilization to meet the disposal site performance criteria. Class A solidified materials need only be a free standing monolith as opposed to Class B/C LLW that must meet the waste form qualification testing (specified in section C.2). Segregation of the Class A waste from the Class B/C waste in the disposal environment serves to prevent failure of the engineered systems for disposal of the Class B/C waste. Stability is allowed but not currently required for Class A waste.

regulations, then the regulated and the regulator may have challenges in determining what is required to protect public health versus what is suggested in guidance or policy.

## **THE TEXAS SOLUTION**

We have noted from the outset that the State of Texas has made great strides in demonstrating that new facilities can be licensed and made available to help solve the Nation's challenges in disposing of Class B/C LLW. On September 10, 2009, Waste Control Specialists LLC (WCS) received its final license (Reference 1) from the Texas Commission on Environmental Quality (TCEQ) authorizing disposal of Class A, B, and C LLW at its facility in Andrews County, Texas. The issuance of this license is the first step to opening the first facility for disposal of LLW under the Low-Level Radioactive Waste Policy Act of 1980 and as amended in 1985 ("LLWPA").

WCS is optimistic that its Compact facility will eventually be open for controlled disposal of Class A, B, and C LLW by non-Compact generators. Over the past several months, the Texas Low-Level Radioactive Waste Disposal Compact Commission ("Texas Compact Commission") has been drafting rules to govern the import and export of Class A, B and C LLW into and out of the Texas Compact. The Texas Compact Commission is currently responding to stakeholder comments on a draft rule that would establish the process to apply for import and export petitions for LLW into and out of the Texas Compact. It is anticipated that the Texas Compact Commission will vote on the draft rule in the very near future.

## **ECONOMIC IMPACTS**

WCS recognizes that the NRC is largely unconcerned with commercial issues. However, the NRC staff has shared their awareness that disposal site access and a viable disposal pathway, not only for the Texas Compact but for the nation at large, is an issue of concern. WCS recently announced that the cost of waste disposal, should controlled importation by non-Compact generators be authorized, would be approximately a factor of 10 less expensive than if importation were prohibited by the Texas Compact Commission.

The rates recently provided as part of a rate-setting rulemaking to the TCEQ reflect that there has never been a more expensive and robust waste disposal facility licensed or constructed in the United States. WCS' disposal facility is required to be constructed using state-of-the-art science and technology designed specifically for Class B/C LLW that ensures members of the public will be safe for thousands of years<sup>4</sup> into the future. The significant safety, health and environment safeguards that TCEQ directed be put in place include concrete and clay liners, 150 active monitoring wells and almost \$140 million of funds to cover closure, post-closure and long-term monitoring of the disposal facility.

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<sup>4</sup> Under Title 30, Texas Administrative Code (TAC), Chapter 336.709, a minimum period of 1,000 years after closure or the period where peak dose occurs, whichever is longer, is required as the period of analysis.

At a meeting held on December 14, 2009, WCS encouraged the NRC to seriously consider the unintended consequences that could result from reversal of its longstanding policy on blending waste. WCS noted that changes to the BTP that artificially eliminated 50% of the Class B/C LLW across the nation would have a drastic effect on the cost of waste disposal for the 50% of the waste remaining. To recover a given fixed cost investment in a disposal facility, the cost of waste disposal is inversely proportional to the volumes disposed. Furthermore, if such changes to policy resulted in undermining the economic viability of the Texas Compact Waste Facility, then waste streams not suitable for blending (such as disused sealed sources, irradiated hardware, and sealed radioactive sources) could be stranded in perpetuity. Therefore, WCS has encouraged the NRC to reach out to the medical, university, and research communities, as well as National Nuclear Security Administration since it has previously expressed concerns regarding the high cost and lack of disposal options available following the closure of the disposal facility in Barnwell, South Carolina.

### **OPPOSITION REMAINS BY STATES HOSTING A DISPOSAL FACILITY**

The State of Texas in its regulations specifically prohibits intentional dilution or mixing of waste for the purpose of changing waste classification. Waste that is intentionally diluted or blended as a result of stabilization, mixing, or treatment or for any other reason is subject to the disposal regulations to which it would have been subject prior to dilution. As noted in SECY-10-0043, Texas believes that its regulations that serve to classify waste at the point-of-origin rather than the point-of-disposal have served the state well by effectively prohibiting waste blending for the purpose of changing waste classification (similar to Option 3 in SECY-10-0043).

In 2005, the State of Utah's legislature enacted Code Section 19-3-103.7, prohibiting any entity from accepting or seeking a license to accept Class B/C LLW. The State of Utah's regulators have since expressed concerns regarding potential changes to the BTP-established policy that would have the effect of circumventing the State's prohibition of disposing of Class B/C LLW in Utah. Such a decision would allow the same Class B/C radiological source term that is currently prohibited to enter the state, but labeled as Class A LLW. To counter this possibility, Utah's Department of Environmental Quality (DEQ) and the Utah Radiation Control Board (RCB) have expressed their opposition to allowing the disposal of downblended waste if the intended purpose is to acquire disposal site access. This opposition was expressed as comments to the NRC at the January 14, 2010, stakeholder meeting by Utah's DEQ and in a recently issued Position Statement by Utah's RCB.

Given that unanimity against changes to the BTP-established policy exists among the states that host a commercial disposal facility, as well as among the Regional LLW Compacts,<sup>5</sup> close coordination with Agreement States should be undertaken before making fundamental changes in policy.

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<sup>5</sup> See prepared statement from Leonard C. Slosky, representing the Low-Level Radioactive Waste Forum, Inc., and the States of South Carolina, Utah and Washington for the U.S. Nuclear Regulatory Commission meeting on Low-Level Radioactive Waste, dated April 17, 2009.

## CONCLUSIONS

The NRC staff should be commended for working towards a solution to the nation's challenge of disposing Class B/C LLW. WCS believes that its site in Andrews County, Texas, potentially offers the best solution for generators in the country that currently lack a disposal option for Class B/C LLW. The Texas Compact Commission will soon determine if this solution is best also for Texas and Vermont.

As discussed above, WCS agrees with the recommended Option 2 in SECY-10-0043 with one important exception. The Commission should not allow large-scale commercial downblending to proceed in parallel with the rulemaking. Instead, the well known and established policy of not allowing intentional downblending for purposes of changing waste classification should be preserved until the rulemaking is complete and nationwide implementation is harmonized through promulgation of consistent and compatible Agreement State regulations.

In addition to ensuring thorough examination of the downblending proposal—through an established, known, comprehensive, transparent process—this approach would be fair to all stakeholders; would ensure the unintended consequences of the proposal are fully understood, examined, and appropriately addressed; would further NRC's credibility and reputation for thoughtful, deliberative action; and, importantly, would ensure safety and environmental protection are not inadvertently compromised.

WCS requests that a copy of all correspondence regarding this matter be submitted directly to my attention by fax (972-448-1419) or email (skirk@valhi.net). Thank you for your consideration of this submission.

Sincerely,



J. Scott Kirk, CHP  
Vice President, Licensing, Corporate Compliance & Radiation Safety

cc: Commissioner Gregory B. Jaczko  
Commissioner Kristine L. Svinicki  
Commissioner George Apostolakis  
Commissioner William D. Magwood  
Commissioner William C. Ostendorff  
R. William Borchardt  
Martin J. Virgilio

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Charles L. Miller, Ph.D.

Larry W. Camper

Mark Vickery, P.G., TCEQ

Michael Ford, CHP, TLLRWDC

William P. Dornsife, WCS