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February 26, 2010

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Washington, DC 20555-0001

**Subject: CORAR Response to NRC Questions on Blending LLRW.
Docket ID NRC-2009-0520**

Reference: Federal Register, Vol. 74, No 228, November 30, 2009. Pages 62606-62609. Notice of Public Meeting and Request for Comment on Blending of Low-Level Radioactive Waste.

On January 14, 2010 the Council on Radionuclides and Radiopharmaceuticals (CORAR)¹ informed the U.S. Nuclear Regulatory Commission (NRC) staff that material licensees combined small quantities of Low-Level Radioactive Waste (LLRW) to meet Class A classification requirements for the purpose of reducing occupational radiation exposure and to optimize and expedite safe and secure disposal. CORAR has expressed, on behalf of manufacturers and distributors of radionuclides and radiopharmaceuticals and their thousands of licensee customers in industry, biotechnology, biomedical research and healthcare, the widespread concern that most licensees do not currently have access for the safe disposal of Class B and C LLRW nor certain Class A biological and sealed source LLRW. We consider it important that these licensees continue to be allowed to manage their LLRW to minimize the quantity placed in interim storage.

Another primary concern is that we need current and future LLRW disposal sites to provide reliable access at disposal rates that are affordable by these licensees. This requires that current and future commercial LLRW disposal sites are both accessible and economically viable for the long term. We think it critically important that LLRW blending activities be managed to optimize safety and security and ensure there is a reliable cost effective disposal option. In particular, most licensees that are currently placing LLRW in interim storage expect that access to the Andrews County, Texas LLRW disposal site may be the only viable solution in the next twenty years. For this site to be economically viable it must receive LLRW in form and quantity the site is designed for. CORAR believes that the NRC's review of blending practices should consider the safety and security of both small and large scale blending. The NRC should also ensure that blended wastes are acceptable to LLRW sites to avoid the unintended consequence of LLRW becoming stranded in numerous urban and suburban generator sites across the country.

1. CORAR members include the major manufacturers and distributors of radiopharmaceuticals, radioactive sources and radiochemicals used in the U.S. for therapeutic and diagnostic medical applications and for industrial, environmental and biomedical research and quality control.

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CORAR RESPONSE TO SPECIFIC NRC QUESTIONS ON BLENDING LLRW

- 1. What safety and security considerations are associated with blending of LLRW, particularly large scale blending that result in a change in waste classification?**

Material licensees are unlikely to pursue large scale blending because they do not generate large quantities of Class B and C waste. Much of the Class B waste generated by material licensees consists of sealed sources and activated and contaminated metals and equipment that are not suitable for blending. However, material licensees should continue to be licensed to have the flexibility to segregate or combine radwastes. This is necessary to maintain occupational and public exposure ALARA. It is also needed to expeditiously process, package and transfer radwaste for off-site treatment and disposal to minimize the hazard and optimize security.

- 2. What are the practical considerations in operating a facility that bear on blending of LLRW?**

When radwastes are combined the primary concerns are their compatibility and the need to segregate long-lived radionuclides to allow short-lived radionuclides to be separately decayed in storage.

- 3. What policy issues are raised by blending of LLRW that lowers the waste classification?**

Compliance with typical materials license conditions and current ALARA regulations should ensure that there are no policy issues concerning the small quantities of Class B and C waste generated by material licensees being blended with Class A wastes to create a disposable Class A waste form. Another consideration is that the NRC LLRW classification system is based on conservative default models appropriate for a wet site like Barnwell. If the arid sites in Utah, Washington and Texas were encouraged to establish site specific waste classifications based on actual site conditions (also consider the 30 meter deep cells in the Texas site) most of the LLRW generated by the biomedical community would be Class A and blending would be redundant.

- 4. What are the potential blending policies/positions that NRC could take and the advantages and disadvantages of each?**

The NRC could consider requiring blended radwastes to be homogenous or limiting combining Class A wastes with wastes that are not more than 10 times the concentration limit for Class A LLRW. The purpose of blending should be to maintain exposure ALARA and to optimize security by expediting containment and transfer to ultimate disposal.

- 5. How should NRC implement a position on blending of LLRW (*i.e.*, by rulemaking, guidance, policy statement or other means)?**

Rulemaking might be necessary to define terms and clarify the regulations. However, the main need is for guidance with plenty of examples of good practices.

- 6. If a rule were to be promulgated, what compatibility category should it be; *i.e.*, how strictly must Agreement States follow any NRC rule?**

Licensees who need to transfer radwastes to another State for treatment or disposal generally prefer uniform regulations to prevent denial of access due to perceived differences in performance standards. However, States should be allowed to promulgate more flexible rules to safely expedite the processing of hold-for decay radwaste or wastes generated, processed and disposed in the State.

- 7. NRC regulations only require waste to be classified when it's ready for disposal. What advantages or disadvantages might there be to classifying it earlier?**

Current NRC practice is appropriate for material licensees. Radwastes should be classified at the point where/when their ultimate dispositions are defined. This is necessary to promote waste minimization by recycling, reprocessing and repackaging using new technology and/or when new disposal options become available.

- 8. If blended waste could not be attributed to the original generator of the waste, what issues does this raise that NRC should address, if any?**

This is a potential shared liability issue which is most likely to be decided by a law court than by a regulatory agency.

- 9. What would be a risk-informed, performance-based approach to addressing blending?**

A risk informed, performance based approach should ensure that procedures are ALARA and enhance security.

- 10. Given that Agreement States are not required to adopt NRC's guidance on blending, how are different States addressing this issue? What are the advantages and disadvantages of these approaches?**

The State should comment on this and licensees should then be given the opportunity to respond to the State's comments.

- 11. NRC is budgeting resources to initiate a long-term rulemaking to revise the waste classification system. How might alternative waste classification systems be affected by blending?**

There is a need to update the radwaste classification system to be more compatible with the proposed IAEA classification system, to be risk based instead of based on the origin of the waste. A risk based system could classify according to the actual characteristics of the waste regardless of whether it was blended or not.

- 12. What oversight might be needed to ensure that blending is performed appropriately?**

Current licensing, inspection and enforcement procedures in the NRC and Agreement State regulatory framework in conjunction with disposal site verification and acceptance procedures should be adequate for ensuring the safety and security of blended radwaste.

13. What other issues should NRC staff consider in developing options for Commission consideration related to blending?

In considering blending radwastes, the primary purpose should continue to be optimization of safety, security and environmental protection. Occupational and public dose should be maintained ALARA and interim storage of LLRW on sites that currently have no access for disposal should be minimized by expeditious treatment and transfer to reduce the hazard and enhance security.

Radiochemical manufacturers process hundreds of products generating thousands of waste materials. It is infeasible to separate all these waste materials and moreover if they were separated their volumes would each be so small that it would take years to accumulate a consolidated shipment for treatment or disposal. Many licensees in the research community must combine their radwastes to achieve a consolidated shipment.

Material licensees need to continue to add shielding, solidifying agents and packaging materials to improve the stability and safety of LLRW even though this might reduce the waste classification.

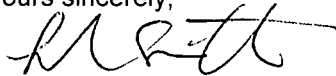
Many Agreement States require material licensees to have waste minimization plans that reduce the volume and expedite the disposal of the waste.

By material licensees we mean the biomedical community and their radionuclide and radiopharmaceutical suppliers.

A critical concern is that LLRW must continue to be offered for disposal in a form that is acceptable to the currently designed LLRW disposal sites. To ensure the economic viability of commercial disposal sites the quantity of Classes of LLRW must be established and/or maintained within a definable range. For example, if the Andrews County disposal site received less Class A, B and C LLRW than it is designed for they may need to increase the cost of disposal which will likely exclude the biomedical community and cause prolonged interim storage and many medical and research facilities to shut down their services. Consequently the economic viability of these disposal sites is critically necessary to ensure the overall optimization of the safety and security of licensed radioactive materials in thousands of sites in urban and suburban communities throughout the US.

CORAR appreciates the opportunity to comment on this subject and would be glad to provide clarification or additional information.

Yours sincerely,



Leonard R. Smith, CHP

Co-chair CORAR Committee on Manufacturing Quality and Safety.