

August 03, 2012

ALL AGREEMENT STATES

**NOTICE OF THE ISSUANCE OF THE DRAFT BRANCH TECHNICAL POSITION ON CONCENTRATION AVERAGING AND ENCAPSULATION FOR PUBLIC COMMENT (FSME-12-067)**

**Purpose:** To inform all Agreement State contacts about the U.S. Nuclear Regulatory Commission (NRC) staff's issuance of the a revised draft of Revision 1 of the Branch Technical Position on Concentration Averaging and Encapsulation (CA BTP) for public comment on June 11, 2012 (77 FR 34411). This NRC guidance is widely used by waste generators and processors in Agreement States in classifying their waste before shipment to a disposal facility.

**Background:** Revising the CA BTP was ranked as a high priority in the NRC staff's Commission paper, SECY-07-0180, "Strategic Assessment of Low-Level Radioactive Waste Regulatory Program," (ADAMS Accession No. ML071350291). The existing version of the CA BTP, published in 1995, (ADAMS Accession No. ML033630732) is not fully risk-informed and performance-based, and does not always describe the bases for its concentration averaging positions. It also needs to be revised to incorporate new provisions related to blending of low-level waste (LLW), as directed by the Commission in its Staff Requirements Memorandum for SECY-10-0043, "Blending of Low-Level Radioactive Waste," (ADAMS Accession No. ML102861764).

The NRC's regulations at Title 10 of the *Code of Federal Regulations* (10 CFR) Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste," establish a waste classification system based on the concentration of specific radionuclides contained in the waste. The regulations in 10 CFR 61.55(a)(8) state that "[t]he concentration of a radionuclide [in waste] may be averaged over the volume of the waste, or weight of the waste if the units [on the values tabulated in the concentration tables] are expressed as nanocuries per gram." The purpose of the waste classification system is to contribute to protection of individuals that inadvertently intrude into a waste disposal facility, a requirement in the NRC's disposal regulations at 10 CFR 61.42. Waste is classified according to the hazard it presents to an inadvertent intruder, and risk to the intruder is managed by having increased disposal facility control measures, such as depth of disposal, as the hazard increases.\*\*

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\*\* This information request has been approved by OMB 3150-0029 expiration 11/30/2013. The estimated burden per response to comply with this voluntary collection is approximately 8 hours. Send comments regarding the burden estimate to the Records and FOIA/Privacy Services Branch (T-5F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet e-mail to [infocollects@nrc.gov](mailto:infocollects@nrc.gov), and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0029), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

The concentration averaging provisions of the 1995 CA BTP were specifically developed to ensure that individual items (e.g., disused sealed sources or other radiological "hot spots") with significantly greater radioactivity than the average activity in a package are safely disposed. Constraints on radiological hot spots are needed to ensure intruder protection, and the CA BTP identifies these constraints.

There have been a number of changes in the LLW program since the 1995 CA BTP was published; these changes were drivers for the current revision. First, the Commission reviewed the CA BTP's position on blending of LLW. The 1995 version constrained the concentration of input waste streams to mixtures of mixable wastes (i.e., waste that is not composed of discrete items) to within a factor of 10 of the average concentration of the final mixture. Also, the 1995 version does not constrain mixing of these wastes if operational efficiency or worker exposures were affected by the blending. The Commission directed the staff to implement a risk-informed, performance-based approach for LLW blending that made the hazard (i.e., the radioactivity concentration of the final mixture), the primary consideration for averaging constraints. Second, the NRC adopted a risk-informed, performance-based regulatory approach for its programs in the late 1990's, after the 1995 CA BTP was published. This new revision of the CA BTP more fully reflects that regulatory approach, not just for the blending positions, but for all of the other topics it addresses as well. Finally, the 1995 CA BTP significantly constrained disposal of encapsulated sealed sources below the Class B and C limits in the 10 CFR 61.55 waste classification tables. The threat of a radiological dispersal device using sealed radioactive sources caused the staff to re-examine the 1995 assumptions underlying the radioactivity constraints on sealed source disposal, and to better balance the risk associated with inadvertent intrusion with national security and safety issues associated with sealed sources that have no disposal pathway. Licensees must store sealed sources for potentially long periods of time if there is no disposal option, and the sources are subject to loss or abandonment. The CA BTP's revised positions will allow for disposal of more sealed sources than the 1995 CA BTP which will enhance national security by ensuring that the safest and most secure method to manage them is available to licensees.

**Discussion:** NRC is seeking input from the public, licensees, Agreement States, non-Agreement States, and other stakeholders on this revised draft of the CA BTP.

If you have any questions regarding this correspondence, please contact me at 301-415-3340 or the individual named below.

POINT OF CONTACT: James Kennedy  
TELEPHONE: (301) 415-6668

INTERNET: James.Kennedy@NRC.GOV  
FAX: (301) 415-5369

***/RA Pamela Henderson for/***  
Brian J. McDermott, Director  
Division of Materials Safety and State Agreements  
Office of Federal and State Materials  
and Environmental Management Programs

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| <b>OFC</b>  | DWMEP    | DWMEP   | MSSA:ASPB:BC | FSME:MSSA:DD                      | FSME:MSSA:D                         |
| <b>NAME</b> | JKennedy | GSuber  | DWhite       | CEinberg<br><i>PHenderson for</i> | BMcDermott<br><i>PHenderson for</i> |
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