April 8, 2014

MEMORANDUM TO: Aby Mohseni, Deputy Director
Environmental Protection and Performance
Assessment Directorate
Division of Waste Management
and Environmental Protection

FROM: Melanie Wong, Senior Project Manager **/RA/**
Environmental Protection and Performance
Assessment Directorate
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and Environmental Protection

SUBJECT: SUMMARY OF MARCH 7, 2014, PUBLIC WORKSHOP ON LOW-LEVEL RADIOACTIVE WASTE DISPOSAL RULEMAKING AND STRATEGIC ASSESSMENT OF LOW-LEVEL RADIOACTIVE WASTE REGULATORY PROGRAM IN PHOENIX, ARIZONA

On March 7, 2014, staff from the Office of Federal and State Materials and Environmental Management Programs conducted a public workshop to discuss the status of proposed revisions to the U.S. Nuclear Regulatory Commission's (NRC's) Low-Level Radioactive Waste (LLRW) disposal regulations and to gather information on an update to the NRC's 2007 Strategic Assessment of the LLRW regulatory program from stakeholders and other interested members of the public.

BACKGROUND INFORMATION:

Revisions to LLRW Disposal Regulations

The Commission's licensing requirements for the disposal of LLRW in near-surface [the uppermost 30 meters (100 feet)] disposal facilities reside in Part 61 of Title 10 of the Code of Federal Regulations (10 CFR), "Licensing Requirements for Land Disposal of Radioactive Waste."

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In its March 18, 2009, Staff Requirements Memorandum (SRM) SRM-SECY-08-0147, "Response to Commission Order CLI-05-20 Regarding Depleted Uranium", which can be found in the Agencywide Documents Access and Management System (ADAMS) (Accession No. ML090770988), the Commission directed the NRC staff to proceed with a rulemaking to amend 10 CFR Part 61 to specify a requirement for a site-specific analysis for the disposal of large quantities of depleted uranium including the technical requirements for such an analysis, and to develop a guidance document that outlines the parameters and assumptions to be used in conducting such site-specific analyses.

On July 18, 2013, the NRC staff submitted a revised draft proposed rule and associated guidance for Commission's review and approval, SECY-13-0075, "Proposed Rule: Low-Level Radioactive Waste Disposal (10 CFR Part 61) (RIN 3150-A192)" (ADAMS Accession No. ML13129A268). The draft proposed rule would update the existing technical analysis requirements for protection of the general population (i.e., performance assessment); add a new site-specific technical analysis for the protection of inadvertent intruders (i.e., intruder assessment); add a new analysis for certain long-lived LLRW; and revise the technical analyses required at closure. The draft proposed rule would also add a new requirement to develop criteria for the acceptance of LLRW for disposal based on either the results of these technical analyses or on the existing LLRW classification requirements.

In its February 12, 2014, SRM-SECY-13-0075, the Commission approved publication of the proposed rule and the associated draft guidance for public comment, subject to the comments and changes noted in the SRM.

Update to the 2007 Strategic Assessment of the LLRW Regulatory Program

In 2007, the NRC staff published the Strategic Assessment in SECY-07-0180, "Strategic Assessment of Low-Level Radioactive Waste Regulatory Program" (ADAMS Accession No. ML071350299), which identified and prioritized the NRC staff's activities for the NRC's LLRW regulatory program. After 7 years, much progress has been made in completing several activities identified in the 2007 Strategic Assessment. In addition, the national LLRW program continues to evolve. To set the direction for the NRC's LLRW regulatory program in the next several years, the NRC staff will begin developing an updated Strategic Assessment of the NRC's LLRW program. The new assessment will provide opportunities for stakeholder engagement

MARCH 7, 2014, PUBLIC WORKSHOP:

The March 7, 2014, Public Meeting Notice and meeting agenda were made publicly available prior to the meeting and can be found in (ADAMS Accession No. ML14035A503). The announcement for this facilitated public meeting was published in the *Federal Register* (FR) on January 24, 2014, (79 FR 4102). Seventy-five individuals participated in this public meeting, both in person and remotely (electronically) via webinar/telephone. Attendance included representatives from the Agreement States, disposal facility operators, and waste generators (including private and governmental) and members of non-governmental organizations (see enclosure).

The March 7, 2014, public workshop was organized into two parts. In the first part, the NRC staff discussed the status of the proposed revisions to 10 CFR Part 61. In the second part, a

panel of invited experts discussed developments that would affect the LLRW regulatory program in the next 5 to 7 years, including changes to the national landscape in the LLRW area that would affect licensees and sited States in the context of safety, security, and the protection of the environment. During the workshop, time was provided for facilitated public discussion with members of the audience. The public meeting was transcribed to serve as an official record of the event, and the stakeholder comments and suggestions provided can be found in the transcript (ADAMS Accession No. ML14086A540). The meeting slides are available in ADAMS (ADAMS Accession No. ML14070A058).

As the meeting facilitator responsible for moderating the workshop, Chip Cameron opened the workshop. Larry Camper, Director of the Division of Waste Management and Environmental Protection (DWMEP), then welcomed the attendees and discussed the objectives of the workshop. He also thanked the panelists for their participation in the Strategic Assessment discussion.

David Esh provided a status of the LLRW disposal rulemaking, specifically focusing on the Commission's direction in SRM-SECY-13-0075. He presented information on the three-tiered period of analysis, intruder assessment, Agreement State compatibility, protective assurance analysis period, defense-in-depth and safety case, and next steps for the proposed rulemaking.

Comments from the discussion on the 10 CFR Part 61 proposed rulemaking include:

- A request was made to issue early and separately the draft guidance document related to the rulemaking since the SRM directed staff to focus on ensuring a thorough review of the draft guidance by the limited community of disposal operations.

- A request was made to issue the next version of the document as a proposed rule and not as a preliminary proposed rule. The commenter believes the rulemaking package is ready to be issued for public review.

- While the Commission directed that the proposed rule should be published with a compatibility Category "B" applied to the most significant provisions of the revised rule, a commenter questioned whether the Commission is open to further examination on the compatibility designation as the SRM requested staff to propose questions in the proposed rule on its appropriateness.

- It was noted that during the rulemaking process, the NRC has engaged the States allowing them opportunities to offer comments and directions on the preliminary draft rulemaking package. Once the proposed rule is issued, a commenter recommended additional outreach efforts in the four sited States to engage those directly affected by the proposed rulemaking.

- A statement was made that the waste classification tables in 10 CFR 61.55 are out of date and are no longer state-of-the-art resulting in underutilization of the current disposal facilities. It was stated that "these facilities are national treasures" and they should be analyzed with state-of-the-art tools and site-specific performance assessments. It was noted that the proposed rulemaking includes flexibility to enable licensees to use either

site-specific waste acceptance criteria based on a site's performance and intruder assessments or the waste classification tables.

- A commenter stressed the importance of selecting the appropriate scenarios for the intruder assessment. It was suggested that these scenarios should be risk-informed and use realistic current technology.

Melanie Wong introduced the topic of the 2007 Strategic Assessment providing background on the development of the assessment, status of the high priority activities in the assessment, proposed activities for the updated Strategic Assessment and next steps in the process.

Next, a panel of subject matter experts addressed three questions related to updating the Strategic Assessment:

- What changes are anticipated to the national landscape in the LLRW area in the context of safety, security, and the protection of the environment in the next 5 to 7 years?

- As a result of the new national landscape, what activities from the 2007 Strategic Assessment should remain on the list and are they appropriately prioritized in order to strengthen the NRC's ability to ensure safe and secure LLRW disposal, improve the effectiveness of its regulations, and assure regulatory stability and predictability while allowing flexibility in disposal options?

- As a result of the new national landscape, what additional changes are needed to the NRC regulatory framework?

PANELISTS:

PARTICIPANT	ORGANIZATION
Ralph Andersen	Nuclear Energy Institute
Brad Broussard	Texas Commission on Environmental Quality
William Dornsife	Waste Control Specialists
Earl Fordham	Washington Department of Health
Michael Garner	Northwest Interstate Compact on Low-Level Radioactive Waste Management/State of Washington
Christine Gelles	U.S. Department of Energy
Rusty Lundberg	Utah Department of Environmental Quality
Dan Shrum	EnergySolutions
Gregory Suber	U.S. Nuclear Regulatory Commission

The staff will use the information and feedback obtained from these discussions to develop a list of priorities for the updated Strategic Assessment.

Comments from the discussion on the Strategic Assessment include:

- The Strategic Assessment should not only consider activities under the NRC regulatory purview but those activities which would broadly impact the national LLRW program. The updated Strategic Assessment should include a review on whether the laws and regulations need to be revised to improve the LLRW framework.

- A high priority gap analysis is needed between the current LLRW disposal and future needs. This analysis could be an activity in the updated Strategic Assessment and would lead to a comprehensive national radioactive waste management program.

- Postulated high impact and low impact scenarios should be developed for the Strategic Assessment which would consider how the national LLRW program might change with each scenario.

- In developing the prioritization of the Strategic Assessment activities, the urgency of the activity should be considered.

- The period of implementation of the updated activities (5 to 7 years) may not be appropriate due to the time frame of future activities of the national LLRW program. For example, the generation of wastes can be predicted with some certainty in the next 85 years. Therefore, a longer strategic time horizon tied to nuclear generation should be considered.

- Large number of decommissioning activities in the future could strain the resources of the national LLRW program.

- Climate change may lead to increase reliance on nuclear energy in the future.

- Greater-than-Class C (GTCC) LLRW is likely to be a high priority activity in the future. However, the activity should focus on determining the regulatory authority for licensing a GTCC disposal facility versus developing the technical requirements for the facility. If the site-specific analysis rulemaking is promulgated, then new technical requirements may not be required.

- A new paradigm shift or a moving away from a more traditional view of the LLRW framework should include public outreach and education.

- Changes to the classification tables in 10 CFR 61.55 were suggested including updating the tables based on the current International Commission on Radiological Protection dosimetry. The deletion of the classification tables was also suggested, however, this should be carefully considered since the classification tables are embodied within a number of laws. The updating of the classification tables could follow a similar process to the International Atomic Energy Agency process for updating its safety requirements on regulations for the safe transport of radioactive material.

- The involvement of the LLRW community in the process of revising 40 CFR 190 was recommended as it may have implications to the national LLRW program.

- Waste incidental to a large nuclear event should be considered in the context of the NRC LLRW regulatory framework.

- There is an urgency to dispose of disused sealed sources based on national security concerns and consideration should be given on how disposal of sealed sources can be

encouraged. Financial responsibility for sealed sources is important, as well as ways to improve their tracking.

- The recycling (clearance) of LLRW was suggested to be included in the updated Strategic Assessment.

- New technology that generate new waste forms and new waste streams should be considered in the updated Strategic Assessment. For example, small modular reactors and domestic production of molybdenum-99 may generate different waste streams.

- Maintaining sufficient disposal capacity should be considered by the LLRW community (e.g., the development of new LLRW disposal sites). Implications of disposing of LLRW waste in a subtitle C facility or a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) facility needs to be considered. For example, low activity waste disposal in other than a 10 CFR Part 61 disposal facility could increase the cost of disposal for all the generators that use such a facility. The U.S. Department of Energy is also planning to develop three new CERCLA disposal sites which may have economic and facility operability implications to the commercial market.

- The NRC's interim staff guidance for alternative disposal requests for low-activity waste is being revised and should be considered an ongoing activity. The appropriateness of the 20.2002 exemption process needs to be considered in the updated Strategic Assessment. The 20.2002 exemption process is considered by some to be inappropriate to be used to dispose of large volume of wastes. The transparency of the 20.2002 exemptions process also should be considered.

- A low-activity waste rulemaking could rely on the technical analysis performed for the rulemaking for disposition of solid materials, which focused on clearance and restricted release of materials.

- There may be some waste management implications from the recently approved exemption process for the disposal of radioactive materials in an existing Resource Conservation and Recovery Act permitted disposal cell based on concentrations that were developed from a site-specific performance assessment.

- Update to the manifest requirements should be included in the Strategic Assessment. The scope of the update would be impacted by the upcoming Regulatory Issue Summary on the Phantom 4 scaling factors.

- An activity in the updated Strategic Assessment should include determining when radioactive material becomes waste and could be coupled with addressing waste attribution issues.

- Regarding changes to 10 CFR Part 61, the impact of changes to the regulatory structure and its impact to disposal of materials such as depleted uranium should be considered. The appropriateness of the dose criteria to a member of the public was noted.

- Regarding the activities listed in the 2007 Strategic Assessment, several of the activities should be grouped together such as those related to low-activity wastes and changes to 10 CFR Part 61. Several of the activities could be combined in the proposed gap analysis activity. It was suggested that change to CFR Part 61 would first begin with an advance notice of proposed rulemaking. However, it was noted that the Commission's previous direction ceased any efforts to develop and implement major revisions to 10 CFR Part 61. In addition to the site specific analysis rulemaking, a risk-informing the waste classification tables rulemaking is the only rulemaking currently being considered.

- The NRC should include the medical and industrial generators of LLRW in its outreach activities related to updating the Strategic Assessment.

PATH FORWARD:

At the end of the meeting, Aby Mohseni, Deputy Director of DWMEP, summarized highlights from the workshop. He expressed the view that the discussions, as well as the subsequent feedback from the meeting participants had been constructive and informative. He noted there would be additional outreach efforts related to both the proposed rulemaking and updated assessment. Both the proposed rule and draft updated Strategic Assessment are expected to be published in 2015. In addition, the NRC plans additional meetings and workshop on GTCC related issues.

Enclosure:
Attendance List

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ML14092A114

OFC	DWMEP	DWMEP	DWMEP	DWMEP	DWMEP	DWMEP
NAME	MWong	DEsh	TMoon	CMcKenney	GSuber	MWong
DATE	04/2/14	04/2/14	04/2/14	04/4/14	04/3/14	04/8/14

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UNITED STATES NUCLEAR REGULATORY COMMISSION
Protecting People and the Environment

NRC's Public Workshop on the Status of Low-Level Radioactive Waste Disposal Rulemaking and Strategic Assessment of Low-Level Waste Regulatory Program

Phoenix, Arizona

Friday, March 7th, 2014
8:00 a.m. to 1:00 p.m.

	NAME	AFFILIATION IF ANY
1	Terrance Dickinson	APS / Palo Verde
2	David James	JW James Consulting, LLC
3	Thomas Kalinowski	RW James Consulting, LLC
4	Billy Cox	EPRI
5	Bob Petras	SRR Inc
6	Dan Shum	Energy Solutions
7	Kalu Aziz	FANR, UAE
8	Sean McCandless	Energy Solutions
9	James Joyce	U.S. DOE
10	Michael Klebe	IEMA
11	Kelly Graber	IEMA
12	Christine Gelles	DOE
13	Rusty Lundberg	UT DEQ
14	Mark Kirsche	ECC / M4 Services
15	Ashok Kapoor	VSDOE
16	Barbara Freund	Federal Ministry for the Environment etc (Germany)
17	Boby Abu-Eid	USNRC
18	John Kinneman	Talisman Int'l.
19	Mike Garner	NW Compact
20	Patrick Donnelly	Arizona Public Service
21	John R. Vincenti	ACURI
22	Maram Kassis	LBNL CA.
23	Lisa Edwards	EPRI
24	Thomas Magette	PWC
25	Mark Lewis	Energy Solutions

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26	Earl Fordham	Wash Dept of Health
27	Andrew Stewart	CNSC
28	Lemuel Clark	RMD
29	Chris McKenzie	NRC
30	Roshan Shadlou	LBNL
31	Miguel Azor	Exelon ~~NOT GOV~~
32	Scott Kirk	NCS
33	Paul Macbett	US DOE
34	Sana Bilal	Federal Authority For Nuclear Reg.
35	BRAD BROUSSARD	TEX. COMM. ON ENV. QUALITY
36	Sonny Goldstein	EFCOG - Energy Solutions
37	Jeremy Dillon	Exchange Monitor
38	James M Williams	Western Interstate Energy Bd.
39	PAUL BLACK	NEPTUNE & CO., INC
40	Roger Stigers	PPL Susquehanna LLC
41	Greg Suber	NRC
42	Melanie Wong	NRC
43	Dave Esh	NRC
44	Aby M	NRC
45	Larry Camper	NRC
46	Chip Cameron	Perlstein
47	Stuart Walker	EPA
48	Todd Lovinger	LLW Forum
49	Tarsha Moon	NRC
50	Mike Nolan	Lucas Engineering
51	David Eaton	CH2M HILL

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52	Joseph Rustick	Vanderbilt University
53	Gary Bende	US Energy
54	Sonny Goldstein	Energy Facility Contractors Group ✓
55	Clint Miller	Pacific Gas & Electric ✓
56	Gregory Smith	Mayo Clinic Rochester (Webinar)
57	Brenda Armstrong	Yale (Webinar)
58	Rich Janeti	PA DEP (Webinar)
59	Linda Wilson	NY gov (Webinar)
60	Lisa Matis	Totratech (Webinar)
61	Leon Rafner	Certrec (Webinar)
62	Don Lowman	NRC (Webinar)
63	David Darling	RI. gov (Webinar)
64	Bruce Davis	Westinghouse (Webinar)
65	James Watkins	Yale (Webinar)
66	Jim Shaffner	nrc (Webinar)
67	William Ebert	ANL (Webinar)
68	Mike Fuller	QSA Global Inc (Webinar)
69	John Greeves	(Webinar)
70	Jim Kennedy	nrc (Webinar)
71	Bret Leslie	NWTRB (Webinar)
72	Shane Jurek.	PPL Susquehanna (Webinar)
73	Brooke Traynham	PWC (Webinar)
74	Jana Bergman	Scientech (Webinar)
75	Kim Cauthen	SRS (Webinar)
76		
77		