

February 27, 2014

MEMORANDUM TO: Division of Spent Fuel Alternative Strategies Staff

FROM: Josephine M. Piccone, Director */RA/*
Division of Spent Fuel Alternative Strategies
Office of Nuclear Material Safety
and Safeguards

SUBJECT: ISSUANCE OF SPENT FUEL ALTERNATIVE STRATEGIES
DIRECTOR'S POLICY AND PROCEDURE LETTER 15,
"GENERAL GUIDANCE FOR STAFF ON YUCCA MOUNTAIN
REVIEW ACTIVITIES"

Enclosed for your use is the Division of Spent Fuel Alternative Strategies (SFAS) Director's Policy and Procedure Letter 15, as stated above. This Policy and Procedure Letter should be used as guidance by staff involved in the review of the Department of Energy's (DOE's) license application and preparation of the Safety Evaluation Report, and the review of DOE's supplement to the Environmental Impact Statement for potential adoption by the U.S. Nuclear Regulatory Commission.

If you have any comments or questions about the enclosed procedure, please contact your immediate supervisor.

Enclosure:
Division of Spent Fuel Alternative Strategies
Director's Policy and Procedure Letter 15

CONTACT: James Rubenstone, SFAS
(301) 287-0532

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**Division of Spent Fuel Alternative Strategies
Director's Policy and Procedure Letter 15**

General Guidance for Staff on Yucca Mountain Review Activities

Background and Scope

This document provides guidance to staff assigned to review activities for the proposed geologic repository for high-level waste at Yucca Mountain, Nevada. These activities are being undertaken in response to direction from the Commission in Memorandum and Order CLI-13-08, and Staff Requirements Memorandum SECY-13-0113, both dated November 18, 2013. Specifically, these activities include completion of the Safety Evaluation Report (SER) for the repository, and the review and potential adoption determination for a supplement to the Yucca Mountain repository site Environmental Impact Statement (EIS), to be issued by the Department of Energy (DOE). The Commission also directed that all references in the SER be made public¹. The Division of Spent Fuel Alternative Strategies (SFAS) in the Office of Nuclear Material Safety and Safeguards is the lead organization for the review activities. This guidance is intended to supplement previous guidance on the review of the Yucca Mountain License Application and to provide additional consideration given that the review was previously suspended.

Staff issued Volume 1 (General Information) of the SER in 2010 (NUREG-1949, vol. 1). This volume will not be revised as part of the current effort. As part of its orderly closure of review activities, the staff also issued three Technical Evaluation Reports (TERs) in 2011, for preclosure (NUREG-2108), postclosure (NUREG-2107), and administrative and programmatic (NUREG-2109) areas of the DOE License Application. In addition, staff completed more than 40 knowledge management documents during its orderly closure of the review. Some of these documents may be of use in completing the review.

Guidance for Completion of the Safety Evaluation Report

The Yucca Mountain Review Plan (YMRP, NUREG-1804, rev. 2) continues to be the principal guidance for staff in evaluating the License Application. The YMRP provides specific review methods and acceptance criteria for the material in each chapter of the SER. Staff should consider the acceptance criteria in the YMRP in finalizing and documenting the regulatory findings in each chapter and volume of the SER. It should be clear in the SER text that the YMRP criteria have been considered. HLWRS Policy and Procedure Letter 14 provides guidance for areas of the YMRP that are affected by the 2009 revisions to 10 CFR Part 63, which address requirements for assessing repository performance for the period beyond 10,000 years after permanent closure.

Each chapter of the remaining SER volumes will be assigned a Chapter Champion (CC) and one or more technical staff from Nuclear Regulatory Commission (NRC) and/or Center for Nuclear Waste Regulatory Analyses (CNWRA). The CC serves as the lead author and is

¹ The Commission also directed the Secretary of the Commission and appropriate staff to place LSN document collections in ADAMS as non-public documents. In a subsequent Memorandum and Order CLI-14-01 (January 24, 2014) and related SRM, the Commission directed that these documents be made public in ADAMS as appropriate and as existing Nuclear Waste Fund appropriations allow. These activities are not addressed in this guidance document.

responsible for coordinating the team in completing the chapter. The CC ensures that the regulatory bases and technical content are clearly articulated, and coordinates with the other CCs to ensure the chapter is integrated into the SER. The draft versions of the SER will be maintained in the CNWRA SharePoint site. The Project Manager for each volume is responsible for version control and assigning access to review team members.

In completing the SER, the CC and review team should:

- review the existing material of the chapter, in both the most recent draft SER and corresponding TER chapter;
- determine the need for changes or additions to the existing text;
- determine the need for additional supporting calculations or technical analyses;
- determine the need for any additional information (requests for additional information from DOE will need management approval);
- provide the changes or additions in accord with the schedule established by the volume Project Manager, cognizant Branch Chief, and SFAS management; and
- ensure that all references cited in the chapter are publicly available.

Additional detail on the review process is provided in the high-level *Project Plan for Yucca Mountain Review Activities* (enclosure to SECY-13-0136, 2013).

Staff's review of the existing material should focus on completeness of the discussion and technical basis given to support each finding. Staff should strive for clarity, transparency, and traceability in the presentation. In addition, the authors should work to make their chapter understandable to a general reader (for example, an ASLB judge or a member of the public), not just a narrow range of experts: use plain English as much as possible, and minimize the use of acronyms and jargon.

For each chapter, the review staff should be familiar with any relevant admitted contentions. It is not necessary to explicitly address each contention, but, as discussed previously, the chapter text should provide sufficient discussion to support staff findings.

Staff should be aware of any significant new information in the specific area of the chapter that may need to be included in the discussion. New information includes not only information which may alter any previous draft findings or conclusions, but also information that can improve clarity or strengthen the technical basis in the chapter. Given the suspension of DOE activities specific to the Yucca Mountain project, new information may not be available in new DOE project documents, but rather in the open technical literature in the disciplinary area of a given chapter. Other potential sources of new information could be recent technical work by NRC or others on related topics (e.g., material corrosion, hazard evaluation) or recent refinements in guidance on programmatic areas.

Given previous review activities, the chapter team may determine that existing material is sufficient with, for example, only limited modifications. Thus, staff should adopt work previously completed to the maximum extent practicable. If the chapter team determines that extensive modifications may be necessary, they should inform the cognizant Project Manager and Branch Chief as early as possible so that the potential project impacts can be considered. The Project Manager and Branch Chief will consult with Division management on potential project impacts, and inform Office management periodically or as needed.

For several draft chapters of the SER, the staff had previously performed independent calculations to confirm applicant claims and support staff technical positions. During completion of the SER, the review staff should become familiar with these calculations and confirm that they are sufficiently explained and documented. If the chapter team determines that further independent calculations may be needed, or would improve the clarity or strengthen the

technical basis, they should inform the cognizant Project Manager and Branch Chief as early as possible so that the potential project impacts can be considered. The Project Manager and Branch Chief will consult with Division management on potential project impacts, and inform Office management periodically or as needed. All analyses, confirmatory experimental results, computer programs, input and output should be retained.

During the previous review activities, the staff identified some areas where additional information was needed from DOE. At the time that the review was suspended, DOE had provided responses to all of the requests for additional information (RAIs) from the staff, and staff had reviewed the responses and had no further questions. Staff should strive to make and support its regulatory findings using information that is currently available. Staff should also consider the use of license conditions and prior DOE commitments, where appropriate, to ensure that its findings are clear and well supported. If the chapter team determines that additional information may be needed, they should inform the cognizant Project Manager and Branch Chief as early as possible so that the potential project impacts can be considered. The Project Manager and Branch Chief will consult with Division management on potential project impacts, and inform Office management periodically or as needed.

As directed by the Commission, all references cited in the SER should be publicly available at the time the SER volume is issued. For most references, this means availability in ADAMS as a public document (with some exceptions following usual NRC practices, for copyrighted material such as books or journal articles, proprietary information, or other controlled information). A significant portion of the potential references are in ADAMS as public documents, including all NRC-staff-generated documents, the DOE License Application, DOE responses to RAIs, and many DOE reports. During previous review activities, and during orderly closure when the TERs were issued, the Licensing Support Network (LSN) provided public access to relevant documents from DOE, its contractors, and other parties to the proceeding. The LSN is no longer operational, and such access should no longer be assumed. NRC's Office of Information Services is loading the LSN collections from DOE and other parties to the proceeding into ADAMS as non-public documents. The chapter team should identify as early as possible those references cited in the SER that are not in ADAMS as public documents, and determine if staff currently possesses the reference document in electronic form, or if a copy needs to be obtained. The CC should provide the volume Project Manager with a list of all references that are not public in ADAMS and whether copies need to be obtained as early as possible. The Project Managers will obtain the needed documents from the non-public LSN collection in ADAMS, or directly from DOE or other parties, as necessary, and ensure that all references in the SER are public at time of volume issuance.

Guidance for Review and Potential Adoption Determination of the EIS Supplement

DOE has committed to preparing a supplement to its EIS to address the issues identified by NRC staff in its adoption determination report.² At this time, DOE has not announced its process and schedule for completing the supplement. The following discussion assumes that DOE will issue a draft supplement for public comment and a final supplement, which will be reviewed by NRC staff for adoption.

In its adoption determination report for the DOE final EIS for the Yucca Mountain repository, NRC staff stated a need for supplementation in two areas related to groundwater (NRC Staff Adoption Determination Report, 2008, section 3.2.1.4.2):

² Letter from Peter B. Lyons, DOE, to Representative Fred Upton, Chairman, House Energy and Commerce Committee, January 6, 2014, stating that DOE will honor the request in Commission's Memorandum and Order (CLI-13-08, November 18, 2013) that DOE prepare a supplement to the EIS.

- Impacts on groundwater, including the full extent of the volcanic-alluvial aquifer, the cumulative amount of radiological and non-radiological contaminants that can be reasonably expected to enter the aquifer from the repository and the amount that could reasonably remain over time, and estimates of contamination in the groundwater, given potential accumulation of radiological and non-radiological contaminants.
- Impacts from surface discharges of groundwater, including a description of the locations of potential natural discharge of contaminated groundwater for present and expected future wetter periods, a description of the physical processes at the surface discharge locations that can affect accumulation, concentration, and potential remobilization of groundwater-borne contaminants, and estimates of the amount of contaminants that could be deposited at or near the surface.

In 2009, DOE provided to NRC staff a technical report intended to address these areas (Analysis of Postclosure Groundwater Impacts for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at a Yucca Mountain, Nye County, Nevada, 2009). Unless DOE indicates otherwise, staff assumes that this technical report will serve as a basis for the DOE supplement. To complete the adoption determination of the final DOE supplement, staff assigned to the supplement review should:

- become familiar with NRC staff's September 2008 Adoption Determination Report and the analysis presented in the 2009 DOE technical report and its supporting calculations;
- engage with DOE in public meetings to understand DOE's process and schedule for completing its supplement;
- review the DOE draft supplement, when issued, and provide comments as appropriate;
- attend any public meetings held by DOE during the public comment period; and
- review the DOE final supplement and issue an adoption determination.

Further guidance regarding any NRC adoption determination will be developed as necessary.

Guidance for Preservation of Potential Documentary Material

As described in Regulatory Guide 3.69, Topical Guidelines for the LSN, NRC staff has a duty to identify and preserve certain information that is or may be relevant to a Yucca Mountain proceeding. This may include calculations, technical analyses, conclusions, and other related documents. Documents may also need to be retained under other laws, regulations, or policies. Staff should refer to Management Directive 3.53, "NRC Records and Document Management Program," Management Directive 3.57, "Correspondence Management," and Management Directive 3.1, "Freedom of Information Act."

Useful References

Yucca Mountain Review Plan, NUREG-1804, rev. 2, 2003.

Technical Evaluation Report, Preclosure; NUREG-2108, 2011.

Technical Evaluation Report, Postclosure; NUREG-2107, 2011.

Technical Evaluation Report, Administrative and Programmatic; NUREG-2109, 2011.

HLWRS Policy and Procedure Letter 01, Guidance for Interim Staff Guidance Development and Implementation, 2004. ML042160588

HLWRS Policy and Procedure Letter 02, Documenting Non-concurrence, 2005. ML052760346

HLWRS Policy and Procedure Letter 11, Adoption Determination Review of the U.S. Department of Energy's Final Environmental Impact Statement for the Proposed Geologic Repository at Yucca Mountain for Issuance of a Construction Authorization, rev. 1, 2008. ML080510400

HLWRS Policy and Procedure Letter 14, Application of YMRP for Review Under Revised Part 63, 2009. ML090850014

Project Plan, Yucca Mountain Review Activities, December, 2013 (enclosure to SECY-13-0136). ML13346A257

U.S. Nuclear Regulatory Commission Staff's Adoption Determination Report for the U.S. Department of Energy's Environmental Impact Statements for the Proposed Geologic Repository at Yucca Mountain. 2008. ML082420342

Analysis of Postclosure Groundwater Impacts for a Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada, U.S. Department of Energy, RWEV-REP-001, 2009. ML092150328

Approved: */RA/ [Original signed by Josephine Piccone]*

Date: February, 27, 2014, Director, SFAS