SUMMARY OF THE
U.S. NUCLEAR REGULATORY COMMISSION / U.S. DEPARTMENT OF ENERGY
QUARTERLY MANAGEMENT MEETING
ROCKVILLE, MARYLAND
March 27, 2007

Introduction

The U.S. Nuclear Regulatory Commission (NRC) and U.S. Department of Energy (DOE) held a public Quarterly Management Meeting on March 27, 2007. The purpose of this meeting was to discuss the overall progress of the Yucca Mountain Project (YMP) on the proposed geologic repository site at Yucca Mountain, Nevada. The meeting was held at NRC Headquarters in Rockville, Maryland, with video conferencing to the Center for Nuclear Waste Regulatory Analyses (CNWRA) in San Antonio, Texas; NRC Region IV in Dallas, Texas; and the NRC's Atomic Safety and Licensing Board hearing facility in Las Vegas, Nevada. Teleconferencing was also made available to interested stakeholders. Other participants included the Nuclear Energy Institute, State of Nevada, Nye County, Clark County, Pine County, the Nuclear Waste Technical Review Board, and members of the public.

Opening Remarks

The NRC thanked everyone for attending and emphasized that the Quarterly Management Meeting gives the NRC a chance to reflect on the items that were completed in the last quarter, express any concerns publicly to DOE. The NRC provided the DOE and the public with some insight on the way the NRC will operate once the license application (LA) is tendered. For instance, meetings held after the LA is submitted will follow the same NRC public meeting procedures as any other applicant. The NRC stated that it expects a high quality LA from DOE, that is complete and accurate in all material respects.

Jack Strosnider's retirement was announced. Michael Weber and Eric Leeds were introduced as the new Director and Deputy Director of the NRC's Office of Nuclear Material Safety and Safeguards.

NRC Program Update

NRC's understanding of DOE's methods and approaches continues to grow. The NRC anticipates that it will make a docketing decision within approximately 6 months after receipt of the LA. The purpose of this initial review for docketing is to determine whether the LA contains sufficient information to begin a regulatory review in accordance with our regulations in 10 CFR Part 63 and other applicable requirements. This determination does not reflect the technical adequacy of the information, but a judgment that the NRC can begin the review to determine technical adequacy for a decision. Since Part 63 is a performance-based and risk-informed regulation, DOE has latitude in presenting its case for compliance with the NRC's Part 63 regulations. The review for docketing will have to consider how DOE intends to make its compliance demonstration.

The LA should clearly present the pre-closure and post-closure safety requirements, identifying barriers important to waste isolation, and structures systems and components important to safety within the context of the approach DOE is taking. The NRC will ask whether the application:

1. Describes how the information in the license application meets the rule requirements;
2. Highlights requests for exemptions from the rules and provide justification;
3. Contains technical information sufficient to address the risk-significance;
4. Describes the models, assumptions and supporting data used to perform any analyses;
5. Contains specific references to documents used to form conclusions in the license application.

DOE Program Update

Mr. Edward Sproat, Director, Office of Civilian Radioactive Waste Management (OCRWM), provided an update on YMP progress since the December 7, 2006, Management Meeting, beginning with the funding for the YMP, currently set at $444.5 million. While this amount is less than the amount requested by the President, the reduction will not adversely affect the quality of the LA nor will it impact the submittal schedule of June 2008. However, the amount required for fiscal year 2008 is $495 million and this amount is critical to the program's success. Congress needs to address the issue of land withdrawal and should consider the proposal to increase the present statutory limit of 70,000 metric tons of heavy metal (MTHM) imposed on the repository.

Other YMP milestones are the Supplemental Environmental Impact Statement (SEIS) for the repository and the SEIS for the Nevada rail line Mina route to the repository. These documents are being drafted and will be submitted in final form in May 2008.

The Licensing Support Network (LSN) will be certified by DOE by December 2007. An extensive effort has been made to ensure that the LSN contains the documents referenced in the LA as of the date of submittal. DOE has implemented a number of actions to ensure a more integrated approach for preparation of the LA. The process includes four stages: "storyboard" drafts; interim drafts; a final draft, and the final validation. Monthly management reviews are being performed to ensure consistency across the various sections, detect any signs of a potential delay in the development of the LA, and to ensure that potential impacts to quality and schedule are being addressed.

Corrective Action Program

Mr. Paul Golan, Deputy Director, OCRWM, provided an update of the Corrective Action Program (CAP), included a statement of CAP problems, the cause of the problem, and the corrective actions that have been or will be taken. Audits and surveillances performed in 2005 and 2006 indicated the CAP had multiple performance effectiveness issues. An assessment by the Nuclear Energy Institute (NEI) of the effectiveness of the OCRWM Quality Assurance (QA) Program in fall 2006 found the CAP was not effectively implemented. In December 2006, an audit was performed by the Office of Quality Assurance (OQA) of assessment activities, corrective actions and trending programs. This audit determined that the CAP was ineffective. OCRWM line management did not recognize the significance of repeated external and internal

reviews that identified that the CAP was not fully effective, and was not taking aggressive actions to correct identified problems and ensure that the CAP was fully effective. The root cause of the problem was that OCRWM senior management failed to consistently exercise leadership by not establishing adequate expectations and standards for CAP performance and then reinforcing these expectations as a core business process for the project. Contributing causes included the lack of effective barriers, tolerance of unresolved CAP issues, and ineffective self assessment in the pursuit of continuous improvement. Responding to these findings, in July 2006, OCRWM senior management increased its involvement in CAP; the committee managing the process is now chaired by senior DOE management and has several DOE and Bechtel SAIC Company, LLC (BSC) managers as members. In addition, senior management of the Lead Lab was added to the committee in October 2006, when the transition was completed. In October 2006, a CAP Performance Improvement Plan was issued. In December 2006, a Level "A" Condition Report (CR 9774) was issued addressing CAP ineffectiveness followed by the issuance of the Root Cause Analysis Report and the reconstitution of a Condition Screen Team (CST). Corrective actions have been developed to set expectations, provide sponsorship, change agents, sustaining sponsors, communicate expectations broadly, mentor and model behavior, measure performance, hold line managers accountable, and develop and implement a corrective action plan to address the concerns expressed in CR 9774. In conclusion, Mr. Golan noted that an effective CAP is critical to the Project, thus improvement is being sponsored by OCRWM Director and Deputy Director, and actions in CR 9774 will be used to drive overall corrective actions.

Mr. Kokajko asked how OCRWM will obtain rank and file agreement with management's position on the CAP. He also asked if the present top management were to leave the project how DOE would ensure that the policies and procedures would stay in place since they involve psychological and behavior issues.

Mr. Sproat replied that management expectations and consequences concerning the use of the CAP will be reinforced by inclusion in employees' performance evaluations. In the past, the CAP program was sometimes viewed as punitive, which is unacceptable since the aim of the CAP is to identify problem areas and correct the deficient condition. The Condition Screen Team will be staffed by senior personnel who have extensive nuclear experience, which will foster a positive culture change.

Mr. Leeds asked how many CRs are in the system and how many are generated each month. Mr. Golan replied that there were about 700 open CRs presently in the system with about 200 to 300 new CRs generated each month. Mr. Leeds then asked if the CRs were being prioritized and Mr. Golan said yes. Mr. Sproat added that Senior Management meets once a month to look at performance indicators and also the number of repeat CRs.

Mr. Kokajko asked if DOE has looked at past CRs to determine if any were Level A CRs which were either misidentified or closed inappropriately. Mr. Golan answered that DOE has not performed this action.

There was a question from the CNWRA concerning the possible reward for identifying issues and avoiding punitive actions for identifying issues. Mr. Sproat noted that if you do not provide rewards then there will be no initiative to get the job done in a high quality manner. Thus, there is a sense of urgency in providing these rewards to assist in making the CAP system an effective tool to identify and correct issues.

Licensing

Mr. Mark Williams, DOE Director of Regulatory Authority Office, provided an update of licensing activities including the License Application Project. He also listed a number of future interactions proposed by both DOE and NRC and indicated that DOE is prepared to support these interactions. DOE submitted responses to three Additional Information Needs (AINs) in December 2006, as scheduled. However, DOE will address the technical issues in the remaining Key Technical Issues (KTIs) in the LA.

Regarding the status of progress made in the LA Project, Mr. Williams noted that DOE plans to submit a quality LA no later than June 30, 2008. As part of the LA progress, technical teams have been formed and approved, and a performance baseline has been established. The five main components of the LA are surface design, subsurface design, preclosure safety analysis, postclosure safety analysis, and programmatic sections. These are in various stages of development and review. Mr. Williams then provided a summary schedule and described four distinct phases of LA development. Up-front processes for review of the LA have been established to assure sections are integrated across organizations and within the LA itself. In summary, the architecture and resources to develop a quality LA have been defined.

Answering questions from the NRC, Mr. Williams responded that certain documents referenced in the LA will be available in the OCRWM Licensing Support Office, and the cross-walk for KTIs will identify issues that have been raised by the NRC staff.

Michael Weber (NRC) asked if DOE is clear on the docketing criteria and acceptance reviews that the NRC will be performing. Mr. Sproat indicated that he is not as clear as he would like to be and added that the technical exchanges could be a means to clarify the issues related to NRC's docketing requirements. Mr. Kokajko agreed that it is a good idea to maintain a dialog in this regard as part of the future meeting agendas.

Industry Assessment Results

Mr. Larry Newman, Director of OQA, discussed the OCRWM initiative to perform a benchmark study of the QA program relative to nuclear industry excellence standards. Mr. Newman noted that feedback from external evaluation indicated that OCRWM QA program relies on compliance-based oversight and articulated the need to move oversight from compliance to excellence. Mr. Newman stated that as part of this effort, several areas (e.g., quality organization, audit program, corrective action program, self-assessments, line ownership, performance indicators, independent review program, and safety culture) have been identified as needing improvement. As a result, a number of CRs have been generated that, when completed with the appropriate corrective actions, will achieve this improvement. A quality improvement plan is currently under development that would include alignment of the organizational resources of DOE OQA, BSC QA, and the Lead Laboratory QA. Mr. Newman

noted that some of the key personnel leading the nuclear industry improvements are now part of the OCRWM QA organization and will provide the leadership to implement similar improvements to the OCRWM program.

USGS E-Mail: Extent of Condition

Mr. Sproat provided an update on root cause analysis and action plan in response to USGS e-mail issues (Attachment 3). During reviews of legacy e-mails in 2004 and 2005 for potential inclusion in the Licensing Support Network, e-mails written by a small number of U.S. Geological Survey (USGS) employees were found suggesting technical product output, software, and information related to the infiltration analysis and model report (AMR) prepared by the USGS may not have been fully compliant with quality assurance requirements. Immediate response actions included an investigation conducted by the DOE Office of Inspector General (OIG) into potential misconduct; the investigation concluded on April 24, 2006, with no charges being filed.

The e-mails were written over a six-year period, between 1998 and 2004 by a small group of USGS employees who expressed negative attitudes about the quality assurance program and suggested noncompliance with requirements (e.g., backdating, making up dates of task completions, and misrepresenting information) regarding USGS net infiltration rate estimates. Some USGS managers and personnel in other YMP organizations were aware of the negative attitudes, but there is no evidence they were addressed before condition report (CR) 5223 was initiated. An examination of modeling software, model reports, and scientific notebooks associated with the USGS work found no evidence that information was falsified or modified as suggested in the e-mails. In a report issued on February 17, 2006, an OCRWM technical evaluation of USGS net infiltration rate estimates found net infiltration rate estimates are corroborated by independent studies of infiltration and recharge in the southwestern United States and therefore supported the Site Recommendation.

An extent of condition review was assessed through keyword searches of over 900,000 e-mails, physical review of more than 50,000 LSN-relevant and non-relevant e-mails from 14 million records in the OCRWM e-mail warehouse, review of over 7,000 documents related to the CAP, and review of 1,138 records from the employee concerns programs. The review found that additional USGS emails that were written by the same individuals indicated similar attitudes and behaviors concerning compliance with the QA Program. The review did not find a widespread or pervasive pattern across OCRWM of a negative attitude toward quality assurance or willful noncompliance with quality assurance requirements. However, the review did find that senior management sponsorship of the Quality Assurance program was lacking and that clear expectations for compliance with QA requirements had not been set across the Program. Analyses of the root cause indicated that OCRWM senior management failed to establish accountability for infiltration product quality.

Technical corrective actions taken to address adequacy of infiltration work included: 1) an evaluation of results from USGS infiltration model; 2) determination of adequacy using corroborating data (completed); and, 3) generation of a new infiltration model and rate estimates to be used in the LA. The evaluation indicated that infiltration AMRs prepared by the USGS and by BSC were not fully compliant with the traceability and transparency requirements of the QARD nor were quality assurance and corrective action processes consistently effective.

However, USGS net infiltration rates were corroborated by data from the southwestern United States and therefore support the Site Recommendation. Other management corrective actions were taken to address both USGS and Program-wide issues. The root cause report including the corrective action plan was distributed during the meeting and is available at the OCRWM website (**www.doe.ocrwm.gov**).

In summary, Mr. Sproat concluded that a negative attitude toward quality assurance or willful noncompliance with quality assurance requirements displayed by some USGS employees was not pervasive across OCRWM. Sandia National Laboratories is developing new infiltration rate estimates and maps, incorporating net infiltration uncertainty, and revising the infiltration AMR to ensure full traceability and transparency. Corrective actions focused on management behaviors are being implemented across the Program to prevent recurrence. An effectiveness review of these corrective actions will be performed in late 2008.

Public Comments

Mr. Steve Frishman, State of Nevada, asked DOE to place the LA baseline material presently in the LSO on the DOE's internet to make it available to the public. Mr. Williams responded that DOE has no plans to do so and that the material supporting the LA will be included into the LSN and available to the public. Mr. Sproat noted that although he had no objections to placing these on the website, he would need to discuss this matter internally within DOE before these actions could take place.

Mr. Frishman also commented about the purpose of the Appendix 7 meetings and noted that he wants to be on record that he sees an attempt by both DOE and NRC to broaden the scope of Appendix 7 meetings and was concerned that the meetings are conducted without an official public notice. NRC explained that the Appendix 7 meetings are part of the pre-licensing interactions as provided by the *Agreement Between DOE/OCRWM and NRC/NMSS Regarding Prelicensing Interactions,* November, 1998. The NRC noted that it intends to follow the Appendix 7 meeting process for pre-licensing information gathering and would consider whether these meetings should be noticed.

Ms. Susan Lynch, State of Nevada, stated that the QA program has been in place well before 1998. However, the QA requirements were ignored and the LA is based on 60-70% of data to which the QA requirements were applied after the data was obtained. Ms. Lynch noted that the State has an active interest and a history of observing audits. However, the State has not received an audit schedule in 6 months, and the DOE website is usually outdated. Mr. Newman responded that OQA will follow up to make sure the website audit schedule is updated and correct.

Ms. Judy Treichel, Nevada Nuclear Task Force, commented that DOE and NRC have assured that they plan to improve public confidence. However, secrecy is increasing, and meetings are still being held in secret, and the public has an interest knowing what transpires in these meetings.

Mr. Charles Fitzpatrick, State of Nevada, noted that several documents supporting the LA will not be final by the time of LSN certification; therefore, in his opinion, the LSN should not be certified until all LA documentation is final. Mr. Sproat responded that he fully expects a number of documents will be revised during the licensing process.

Closing Remarks

In closing, the NRC offered thanks to all participants and encouraged public participation to continue throughout the review, noting that safety was paramount. The NRC encouraged DOE to continue working on several areas, specifically QA and CAP, and cautioned that the NRC would be looking for results over time. The NRC agreed the acceptance review may continue to be a question in DOE's mind, but that the NRC would continue to discuss it at Technical Exchanges and other QMMs. Finally, the NRC emphasized that it was not reviewing a draft LA.

In his closing remarks, Mr. Sproat stated that OCRWM senior management fully understands issues that have been problematic and is leading changes to address these issues and prevent recurrence. DOE understands the need to have and develop a strong senior management team for the future. DOE intends to submit a high-quality LA and intends to defend it vigorously.

Date: 5/7/07

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