Defense Nuclear Facilities Safety Board Public Meeting on Oversight of Complex High Hazard Nuclear Operations

Statement of Dr. Ines Triay
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Good morning Mr. Vice Chairman and Members of the Defense Nuclear Facilities Safety Board. I appreciate the opportunity to be here today to represent the Department of Energy's Office of Environmental Management (EM) and address the actions our office has taken regarding oversight of complex high hazard nuclear operations. My remarks cover the six topics you provided to the Secretary in your letter dated August 25, 2009.

Expectations of the senior Department of Energy (DOE) leadership with respect to safety philosophy and safety management approach.

Safe operations, including safety of the public, safety of our workers, and protection of the environment, are paramount to EM. While the cleanup work we accomplish is fundamental to risk reduction, it is more important that all of our workers are able to go home at the end of each day as healthy as they were when they arrived for work.

I have often heard the Board describe safety management by using an analogy to a three legged stool. The idea is that you need all three legs of the stool for the system to work properly. One leg is requirements and the other two legs are bright and inquisitive people performing oversight, along with good processes and procedures. I believe this analogy appropriately identifies our safety management approach within EM. We rely on requirements, people, such as our Facility Representatives, and our processes and procedures to ensure safety.

Our strategy for meeting EM's programmatic goals is: the rigorous application of our rules, standards, and requirements, many of which you have helped us develop through your recommendations and comments; line management and oversight to ensure that these requirements are effectively implemented; and a system of rewards and penalties when they are not.

Our Field Offices provide management of the contractors that run our facilities. They have delegated responsibilities for most nuclear safety functions; a prominent exception being start up authority for Category 2 nuclear facilities, which I retain at headquarters. EM maintains a list of these limited term delegations and reviews and issues delegations annually. EM requires that

managers with nuclear safety responsibility be qualified as Senior Technical Safety Managers and take Nuclear Executive Leadership Training. My Field Office managers rely on their staffs to ensure that DOE requirements are implemented; foremost among these are our Facility Representatives; I depend on my FRs as my "eyes and ears" in the facilities. Procedure development and compliance is a significant part of the oversight conducted by the FRs; they are assisted by the Headquarters Office of Safety Operation Assurance.

A frequent question is how do we strike a balance between "safety" and "mission"? The view being--evidently–that we somehow need to sacrifice safety to accomplish our cleanup mission. I reject this view. We select controls to ensure that all our operations are safe and believe that a well structured set of controls can improve both safety and mission effectiveness – certainly experience gained by INPO in the commercial nuclear industry supports this.

In addition, we have been encouraging and partnering with EFCOG in an effort to improve our ISMS by providing tools for contractors to improve their safety culture. A primary result of the coordinated EFCOG/DOE effort is the identification of three focus areas and associated attributes that will have the most impact for improvement: (1) Leadership; (2) Employee/Worker Engagement; and (3) Organizational Learning. Our experience shows us that safety culture is an important element in overall performance improvement. A number of DOE and EM contractors are currently piloting safety culture improvement tools and will be working to provide feedback on their effectiveness and sharing lessons learned so that others can take advantage of this pilot effort. We have also been monitoring the NRC rulemaking effort in the area of Safety Conscious Work Environment and issued a Federal Register notice to solicit public comment on the need for DOE to pursue similar rulemaking.

At headquarters, EM tracks a suite of DOE corporate database indicators on a monthly basis for all of its operations from a field office, site, contractor and contractor corporate viewpoint, including:

- Normalized and severity-weighted ORPS scores that represent a composite of all safety related ORPS occurrences;
- Various types of operating experience events tracked by control chart and dashboard indicator methods , including electrical safety, nuclear criticality, authorization basis, near misses, environmental releases, conduct of operations, equipment degradation/failure, fire protection, occupational safety/industrial hygiene, and radiological control; and
- Total recordable case (TRC) and Days away from work, on work restriction or job transfer (DART) case rates.

The monthly indicators are analyzed and reported to the Assistant Secretary and other senior EM leadership and shared with the field office managers. The reports are intended to give management some standard tools to evaluate safety

performance and/or the identification of adverse trends for investigation and improvement activities as needed. While these indicators have been shown to be useful, they are used in conjunction with a robust line safety and project oversight effort that provides the headquarters daily operational awareness of emergent safety issues. These emergent issues are brought to my attention daily or are documented in weekly reports as the events or issues warrant. I have brought along the most recent monthly safety report and will submit it for the record.

Assessment of the progress made in implementing Recommendation 2004-1, *Oversight of Complex, High-Hazard Nuclear Operations*.

Glen Podonsky will be going over the status of the Department's implementation of your Recommendation 2004-1 in more detail; I would like to take this opportunity to mention two of EM's actions in response to this Recommendation.

EM organization improvements have been made since 2004-1; they have included organizations that focus on safety policy (EM-21) and increased safety line oversight and operational awareness (EM-22). The EM safety organization also added quality assurance (QA) two years ago to improve EM's overall QA posture as well as focusing on safety and QA of capital nuclear facility construction projects (EM-23).

EM's Engineering and Technology Applied Research and Technology Development and Deployment Program (often shortened to "Technology Development") includes objectives to improve safety performance and reduce uncertainties associated with design and operation of our facilities. Specifically, our Multi-Year Program Plan (MYPP) summarizes the strategic initiatives to improve safety and reduce costs and environmental impacts associated with waste processing. Safety-related items in the MYPP include Evaluation of High-Efficiency Particulate Air Filter Performance under Upset Conditions: Enhanced Chemical Cleaning: and Long-Term Performance of Cementitious Waste Forms and Materials of Construction—among others. EM is an active participant in the annual Nuclear Safety Research and Development Forum, and I know that Dr Krahn has briefed you several times on EM's Technology Development program.

Application of principles of Integrated Safety Management (ISM) as the foundation for safety management approach.

EM has supported ISM as the foundation for safety management since your recommendation on the subject (95-2)… almost 15 years ago.

In the area of ISM, the 2009 annual EM declaration process is underway; this process requires EM field organizations to perform an ISMS and QA

effectiveness review for FY 2009 and submit a declaration report to the EM Office of Safety and Security by October 30, 2009. The annual ISMS effectiveness review conducted by EM field organizations and contractors is an essential element of ISMS implementation that allows for evaluation and making necessary adjustments. This review is a comprehensive review that encompasses multiple elements, including review of: self-assessments, oversight reviews results, integrated reviews across multiple reporting elements, performance against established safety performance measures, and other feedback and performance information. Elements of this review are ongoing throughout the year, and culminate in a review report that supports an annual summary evaluation.

This year's annual declaration is required to address 10 criteria designed to assess effective integration of Safety, Quality Assurance (QA), and Environmental Management System (EMS) elements. Along with the annual ISMS/QA declaration report, the field offices have been requested to provide the most recent update of their office's ISMS Description. We review these declarations in detail every year.

We apply the principals of ISM during reviews of our construction projects. The overall purpose of the EM Construction Reviews are to determine, through the use of an independent technical review team, whether: the scope of the projects; the underlying assumptions regarding technology; project management; cost and schedule baselines; along with the contingency provisions; are valid and credible—within the budgetary and administrative constraints under which DOE must function. The major elements addressed in each review are project relevant technical disciplines, project management, contract systems, cost engineering, environment, safety and health, quality assurance and prior reviews.

The following projects were reviewed in 2009:

- DUF-6 Conversion Facility at Portsmouth
- Plutonium Preparation (PDCF) at SRS
- Waste Treatment Plant at ORP
- Salt Waste Processing Facility (SWPF) at SRS
- U233 (Building 3019) at OR
- Integrated Waste Treatment Unit (IWTU) at ID

The 2010 review schedule is being developed.

Implementation of contractor assurance models and the appropriate level of DOE oversight for these activities.

Implementation of a Contractor Assurance System is defined in the Department's Oversight Order 226.1A, which is included as a requirement in our contracts. We

use the information provided by our contractors, such as self assessments, and assessments performed by our field offices as input to development of the Headquarters assessment schedule. Our reviews cover both the field office and their contractors.

We, at headquarters, perform an average of more than one (1) safety or QA assessment per month and target those areas where additional oversight is appropriate based on continuous monitoring of site office and contractor safety and QA performance. In addition to the baseline reporting requirements of the ORPS, EM has put in place enhanced reporting requirements that ensure that injuries or process upsets that might not otherwise be reportable are also discussed with my headquarters safety and QA management.

Maintenance of functions, authorities, and responsibilities for personnel with key safety management roles during organizational change.

Our recent EM Headquarters reorganization is now nearing completion. Safety functions and the staffs responsible for those functions have not changed significantly as a result of the reorganization. As you know, I have named Dae Chung as my Principal Deputy and Dr. Steve Krahn as Deputy Assistant Secretary for Safety and Security. I believe these changes have strengthened our safety posture by having substantial nuclear safety expertise at these two senior positions within our organization.

Now that the reorganization is nearing completion, I am allowing EM staff to request reassignments; however, I do not anticipate that any resulting reassignments will affect critical safety functions and I'll be monitoring any moves to ensure a strong safety posture is maintained. Additionally, the CNS and his staff have a continuing role to support the EM program. As you know the CNS was reestablished in the Under Secretary's Office and is staffed with a cadre of senior safety specialists. The CNS is providing support in the Secretary's initiative on external regulation and represents EM concerns regarding the initiative. The CNS has led Construction Project Reviews for the EM Program (Portsmouth, SWPF, Bldg 3019), initiated discussions with the major construction projects on developing a comprehensive approach to commissioning activities, and has developed a Code of Record Policy for EM. The CNS is also conducting 2007-1 Reviews in accordance with the DNFSB 2007-1 Implementation Plan. Further, the CNS has worked closely to integrate oversight and assistance efforts with the EM DAS for Safety & Security.

EM also has also comprehensively documented individual and organizational safety responsibilities in the EM Functions, Responsibilities, and Accountabilities document (FRA) and in specific, formal safety delegations of authority.

Actions taken to stimulate continuous safety improvement.

First, I would like to discuss my February 25, 2009 letter emphasizing safety in planning ARRA work and the role of Recovery Act Readiness Evaluations (RAREs) in ensuing preparations for this work maintain and build on EM's long-term commitment to safe work execution. This letter required the following:

- Federal oversight to include standard site coverage for facility representatives, federal project directors, etc., as an element of site oversight of contractor assurance programs for Safety Management Programs
- Contractor oversight to ensue that the work is accomplished within the bounds of existing ISMS including safety performance metrics tracking
- Recovery Act Readiness Activities to supplement existing sight safety support
- Established Headquarters Oversight Site representatives at each site receiving ARRA funds reporting directly to HQ; and
- Nuclear Safety Requirements for scope performed within Hazard Category 2 or 3 Facilities/Activities include 10CFR830 compliant or properly exempted authorization bases and meet DOE Order 425 Operational Readiness requirements as applicable

EM has consistently encouraged worker involvement to participate in continuous safety improvement. EM encourages our sites and contractors to develop and implement Voluntary Protection Programs to better involve workers in planning and performing works safely. Many of EM contractors have received or are pursuing VPP recognition. EM Field Offices have contractors recognized under the DOE VPP are:

- CBFO (WIPP)
- ID
- RL
- ORP
- SRS
- WVDP
- PPPO (applicant)
- ORO-EM

EM line management believes worker involvement is fundamental to ensuring safety improvement. The HQ EM ISMS Description provides for mechanisms for all workers and management to participate in the ISMS and improve safety programs and performance. Field office ISMS Descriptions follows the lead of the HQ ISMS Description.

Contractors are encouraged to provide programmatic avenues for worker involvement through participation in development of ISMS and other safety

management programs and procedures, work place oversight, and event investigations. An important example of worker participation is work planning and control, where crafts, engineers, subject matter experts, and others work together to fully identify hazards and effective controls. Our contractor employees receive training in their worker rights, responsibilities, and ways to participate in the contractor's 10 CFR 851 Worker Safety and Health Programs. The unions representing our workers have proven to be valuable to program improvement activities and the communication of worker identified hazards or other safety concerns requiring DOE involvement; I encourage our contractors to continuously communicate with the unions at our sites.

EM has made strides in ensuring health effects from our operations are identified and evaluated through strengthened industrial hygiene (IH) and occupational exposure assessments and occupational medical programs. An example of this is our operations at the Hanford tank farms and the Savannah River Site. The Hanford tank farm contractor made significant improvements in its IH program several years ago in response to increased occupational exposures due to an increase in tank waste transfer activities. This IH program is continuing to improve by implementing protective exposure limits for chemical contaminants that do not have regulatory limits.

EM continues to support occupational exposure database and health surveillance activities provided by the DOE Office of Health, Safety and Security (HSS), to include reporting into the Beryllium Registry and supporting HSS health evaluations for DOE "former workers".

I am constantly working with my senior leadership here at the headquarters and in the field to identify good practices and quickly share and implement lessons learned. This past month we provided guidance to the field on the conduct of quarterly safety and recurring event analyses to emphasize the rigor and follow-up needed to ensure continuous improvement opportunities are identified and addressed. I have several programmatic opportunities for EM senior management to discuss recent operational experience and sharing of lessons learned, including bi-monthly EM Field Manager calls and monthly and quarterly project reviews. These calls and reviews emphasize safety as an integral part of the discussion.

Summary

In summary, safe operations, including safety of the public, safety of our workers, and protection of the environment, are of the highest value to EM and this is reflected in our management approach. We have made, and continue to make progress implementing improved oversight of nuclear operations. We are using

the principals of Integrated Safety Management as well as our nuclear safety requirements as a foundation for our safety programs.

In addition, from the outset of EM's ARRA planning, I have directed that it is even more important for us to ensure this work is planned and conducted to meet the high safety standards and performance expected within EM and that safety must be integral and robust from the beginning of this effort. Poor safety performance due to inadequate safety infrastructure, immature safety management programs, inadequate safety training or the lack of appropriate work planning will not be acceptable or tolerated.

We continuously assess contractor's safety performance and take actions as necessary to ensure worker and public protection. Safety functions have been maintained throughout our recent reorganization and we expect continuous improvements in our already strong safety performance. Nevertheless, we will never be complacent when it comes to safety. We will continue to pursue these and other steps to ensure the safety and protection of the public, our workers, and the environment.

I look forward to your comments and questions.

Thank you.