

September 6, 2000

MEMORANDUM TO: Eric Leeds, Acting Chief  
Special Projects Branch  
Division of Fuel Cycle Safety  
and Safeguards, NMSS

THRU: Melanie A. Galloway, Chief  
Enrichment Section  
Special Projects Branch  
Division of Fuel Cycle Safety  
and Safeguards, NMSS

FROM: Andrew Persinko, Sr. Nuclear Engineer R/A  
Enrichment Section  
Special Projects Branch  
Division of Fuel Cycle Safety  
and Safeguards, NMSS

SUBJECT: SUMMARY OF IN-OFFICE REVIEW OF DUKE COGEMA STONE &  
WEBSTER QUALITY ASSURANCE DOCUMENTS FOR THE  
MIXED OXIDE FUEL FABRICATION FACILITY

### **Executive Summary**

The Nuclear Regulatory Commission (NRC) is currently reviewing the Mixed Oxide (MOX) Project Quality Assurance Plan (MPQAP), submitted by letter dated June 22, 2000. To support its review, on August 16-18, 2000, NRC staff from the Division of Fuel Cycle Safety and Safeguards (FCSS) conducted an in-office review of quality assurance (QA) documents and information associated with the mixed oxide (MOX) fuel fabrication facility being designed by Duke Cogema Stone & Webster (DCS). The review was conducted at DCS's offices in Charlotte, North Carolina. QA information reviewed during the in-office review included QA organization and functional responsibilities, team/subcontractor QA controls, quality levels, items relied on for safety (IROFS) designation, and graded QA applications. The applicant responded to questions posed by NRC staff during the visit about the DCS QA plan and its implementation for the MOX fuel fabrication facility project activities.

### **Review Details**

During August 16-18, 2000, Andrew Persinko (MOX Project Manager) and Wilkins Smith (MOX QA reviewer), conducted an in-office review of QA documents and information associated with the MOX fuel fabrication facility project. The MPQAP applies to all DCS MOX project activities, including the MOX fuel fabrication process design being performed by SGN (a wholly owned subsidiary of Cogema). The MPQAP has been submitted to the NRC for review, in advance of the application for construction authorization, currently planned to be submitted to NRC on December 22, 2000. The NRC staff reviewed the QA organization, staffing, reporting

independence and functional responsibilities, and the application of the MPQAP to the team/subcontractor project activities. The staff also reviewed the methodology and procedures for QA design controls for structures, systems and components (SSCs), including determination of quality levels, designation of IROFS, and graded QA applications. DCS presented examples of QA systems implementation, design control processes and products, and responded to questions from NRC staff about the DCS QA plan and its implementation for the MOX fuel fabrication facility project activities.

The NRC staff noted that the MPQAP required clarification to clearly show organization and functional interfaces and responsibilities, including SGN and any QA personnel from organizations other than DCS. DCS indicated that it would proceed with those changes and those needed for the MOX construction application. The staff stated that additional discussion is necessary to justify that the QA organization, as reflected in the DCS organization described in the current MPQAP, satisfies the management reporting level and independence from cost and schedule considerations as required by the American Society of Mechanical Engineers (ASME) NQA-1-1994. Although no indication was found during the review of inadequate QA program implementation or oversight, the staff commented that DCS should review the QA staffing levels to assure that they are sufficient to adequately implement QA activities as project activities intensify. The staff also reviewed the MPQAP definitions of quality levels and their application to SSCs and IROFS and noted that the MPQAP needs to be revised to more fully address the methodology for designation of quality levels and IROFS, and application of graded QA controls and defense-in-depth.

Docket: 70-3098

cc: Mr. Peter Hastings, DCS  
Mr. James Johnson, DOE  
Mr. Henry Potter, SC Dept. of Health  
and Environmental Control

The NRC staff reviewed the QA organization, staffing, reporting independence and functional responsibilities, and the application of the MPQAP to the team/subcontractor project activities. The staff also reviewed the methodology and procedures for QA design controls for structures, systems and components (SSCs), including determination of quality levels, designation of items relied on for safety (IROFS), and graded QA applications. DCS presented examples of QA systems implementation and design control processes and products, and responded to questions from NRC staff about the DCS QA plan and its implementation for the MOX fuel fabrication facility project activities.

The NRC staff noted that the MPQAP required clarification to clearly show organization and functional interfaces and responsibilities, including SGN and any appropriated team members. DCS indicated that they would proceed with those changes and those needed for MOX construction application. The staff stated that it was not clear from the current MPQAP and DCS organization that the QA organization had the appropriate management reporting level and independence from cost and schedule considerations as required by the American Society of Mechanical Engineers (ASME) NQA-1-1994. Although no indication was found during the review of inadequate QA program implementation or oversight, the staff commented that the DCS QA staffing levels should be reviewed for adequacy as project activities intensify. The staff also reviewed the MPQAP definitions of quality levels and their application to SSCs and IROFS. In particular, the methodology for designation of quality levels and IROFS, application of graded QA controls and defense-in-depth should be appropriately addressed in the MPQAP.

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