

April 30, 2002

Mr. Robert H. Ihde  
President and CEO  
Duke Cogema Stone & Webster  
P.O. Box 31847  
Mail Code FC12A  
Charlotte, NC 28231-1847

**SUBJECT: DRAFT SAFETY EVALUATION REPORT ON CONSTRUCTION OF PROPOSED  
MIXED OXIDE FUEL FABRICATION FACILITY**

Dear Mr. Ihde:

By letter dated February 28, 2001, Duke Cogema Stone & Webster (DCS) submitted a Construction Authorization Request (CAR) to the U.S. Nuclear Regulatory Commission (NRC) for authorization to construct a Mixed Oxide (MOX) Fuel Fabrication Facility (MFFF) on the U.S. Department of Energy's (DOE) Savannah River Site (SRS). The CAR contained general information about DCS, financial information, and safety information about the proposed facility's ability to resist natural phenomena and consequences of potential accidents. In support of the CAR, DCS had previously submitted a Quality Assurance Plan, Revision 2 (dated January 29, 2001) and an Environmental Report (dated December 19, 2000).

Pursuant to 10 CFR Part 70, applicants seeking to construct a plutonium processing and fuel fabrication facility must obtain NRC approval before starting construction. The primary regulation governing construction, 10 CFR 70.23(b), states that NRC will approve construction of the principal structures, systems and components of a plutonium processing and fuel fabrication facility if the NRC finds that the design bases of the principal structures, systems, and components and the quality assurance program provide reasonable assurance of protection against natural phenomena and the consequences of potential accidents.

After the CAR was submitted to NRC, DCS informed NRC that it intends to make changes to the proposed facility as a result of programmatic changes announced by DOE. The most significant DOE decision was to eliminate the planned immobilization of surplus weapons-grade plutonium. Instead, DOE decided to convert 34 metric tons of surplus weapons-grade plutonium into MOX fuel. DCS stated that design changes to the proposed MFFF are necessary to accommodate material having impurities that were not included in the previous design. This draft Safety Evaluation Report (DSER) does not address any changes to the facility design bases as a result of the DOE-announced programmatic changes. NRC will issue a revised DSER after it has received and reviewed the supplemental CAR, to be provided by DCS, that describes any changes to the proposed MFFF made necessary by DOE's programmatic changes.

The NRC staff documented its review and preliminary conclusions on the safety-related aspects of the CAR and its supporting information in the attached DSER. In the DSER, the staff concludes that, due to the open items discussed in the DSER pertaining to the proposed MFFF, DCS has not satisfied all of the baseline design criteria requirements set forth in 10 CFR 70.64. Further, until the open items are resolved, the staff cannot conclude, pursuant to 10 CFR 70.23(b), that the applicable design bases described by DCS provide reasonable assurance of protection against natural phenomena and the consequences of potential accidents. The staff notes that in some cases, the item is designated as "open" because the staff has not finished its review of the material provided by DCS.

The staff notes that you submitted a letter dated April 23, 2002, in which you provided responses to some of the staff's questions and committed to providing additional information. Some of that information has been incorporated into the staff's DSER. The staff is continuing to review the information contained in your letter.

The staff requests that DCS review the staff's DSER for technical accuracy and inform the staff, within 60 days, of any information contained in the DSER that DCS believes to be inaccurate.

If you have any questions, please contact Andrew Persinko at (301) 415-6522.

Sincerely,

**/RA/**

Robert C. Pierson, Director  
Division of Fuel Cycle Safety  
and Safeguards  
Office of Nuclear Material Safety  
and Safeguards

Docket: 70-3098

cc: James Johnson, DOE  
Henry Porter, SC Dept of HEC  
John T. Conway, DNFSB  
Louis Zeller, BREDL  
Glenn Carroll, GANE  
Peter Hastings, DCS

The NRC staff documented its review and preliminary conclusions on the safety-related aspects of the CAR and its supporting information in the attached DSER. In the DSER, the staff concludes that, due to the open items discussed in the DSER pertaining to the proposed MFFF, DCS has not satisfied all of the baseline design criteria set forth in 10 CFR 70.64. Further, until the open items are resolved, the staff cannot conclude, pursuant to 10 CFR 70.23(b), that the applicable design bases described by DCS provide reasonable assurance of protection against natural phenomena and the consequences of potential accidents. The staff notes that in some cases, the item is designated as "open" because the staff has not finished its review of the material provided by DCS.

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Robert C. Pierson, Director  
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