

September 8, 2004

Mr. Peter Hastings
Licensing Manager
Duke Cogema Stone & Webster
P.O. Box 31847
Mail Code FC12A
Charlotte, NC 28231-1847

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION - MIXED OXIDE FUEL
FABRICATION FACILITY REVISED CONSTRUCTION AUTHORIZATION
REQUEST

Dear Mr. Hastings

We received your letter dated June 10, 2004, which included page changes to the Construction Authorization Request (CAR). We have reviewed the material provided in your letter and have identified additional information or clarification that is needed to determine its acceptability for approving construction of the proposed facility. We have enclosed our requests for additional information in the attachment. In order for the Nuclear Regulatory Commission (NRC) to meet its schedule for making a determination on your request, please provide a response by September 24, 2004.

If you have any questions, please contact me at (301) 415-5257.

Sincerely,

/RA/

David Brown
Sr. Project Manager
Mixed Oxide Facility Licensing Section
Special Projects Branch
Division of Fuel Cycle Safety
and Safeguards, NMSS

Docket: 70-3098

Attachment: Request for Additional Information

cc: J. Conway, DNFSB
L. Zeller, BREDL
G. Carroll, GANE
J. Johnson, DOE

D. Curran, GANE
D. Silverman, DCS
H. Porter, SCDHEC

Request for Additional Information (RAI)
Revised Construction Authorization Request
Dated June 10, 2004
Duke Cogema Stone & Webster
Docket 70-3098

Chapter 5, ISA

- 1) Sections 5.5.2.1.6.4 (p. 5.5-7) and 5.5.2.3.6.1 (p. 5.5-24).

Identify the correct bounding radiological consequence event and update Section 5, as appropriate.

In Section 5.5.2.1.6.4, "Leaks of AP process Vessels or Pipes within Process Cells," the bounding consequence event was changed from a leak inside the process cell containing the dissolution tanks to a leak in the process cell containing the Liquid Waste Reception Unit. In Section 5.5.2.3.6.1, the bounding radiological consequences were still identified as from the dissolution tanks. Section 70.22(f) requires applicants to submit a description and safety assessment of the design bases of principal structure, systems and components (PSSCs). Section 70.65(b) further requires information that demonstrates compliance with the performance requirements of Section 70.61.

- 2) Section 5.5.2.3.6.3, "Fuel Rod" (p. 5.5-27)

Revise the supporting unmitigated event descriptions in Appendix 5A to reflect the new bounding radiological consequence event of a dropped strongback on three MOX fuel assemblies.

The event identified with bounding radiological consequences has been revised to be the drop of a strongback containing three fuel assemblies containing MOX (6%). The referenced accident sequences are AS-7, AS-9 and RD-10. The original bounding event was one assembly dropped on another assembly. It appears that the supporting unmitigated event descriptions in Appendix 5A have not been revised to reflect this new scenario. Section 70.22(f) requires applicants to submit a description and safety assessment of the design bases of PSSCs. Section 70.65(b) further requires information that demonstrates compliance with the performance requirements of Section 70.61.

- 3) Section 5.5.2.3.6.4, "C4 Confinement" (p. 5.5-29)

Revise the reference to "C34 confinement system" in the last sentence to read "C3 confinement system."

70.22(f), requires applicants to submit a description and safety assessment of the design bases of PSSCs.

4) Section 5.5.2.2, Potential Fire Events Involving the Solvent

Clarify potential solvent fire events and solvent locations.

Parts 70.22(a) and 70.22(f) require a description of equipment, facilities, PSSCs, and design bases that protect health and minimize danger to life and property, and a safety assessment of the PSSCs and design bases. Part 70.61 requires compliance with the performance requirements.

Section 5.5.2.2, page 5.5-16, mentions fires in process cells and identifies the Liquid Waste Reception Unit as the bounding fire event for this group, even though it does not contain solvent or other combustible materials. This is inconsistent with Section 11.3.2.14, which indicates solvent is present in this unit.

The revised CAR includes a new unit entitled the Waste Organic Solvent Unit (KWS - page 11.3-37). This adds tankage to provide for sampling and analysis to determine compliance with the SRS WAC (waste acceptance criteria). Page 11.3-36 also mentions solvent and organic waste collection in Unit KWD (the Liquid Waste Reception Unit). Clarify if this is a separate function from the new Waste Organic Solvent Unit.

Chapter 8, Chemical Process Safety

5) Section 8.1, "Chemical Process Description"

Provide information and clarification on the use of uranyl nitrate.

Parts 70.22(a) and 70.22(f) require a description of equipment, facilities, PSSCs, and design bases that protect health and minimize danger to life and property, and a safety assessment of the PSSCs and design bases.

Section 8 describes the storage of depleted uranium dioxide in the Secured Warehouse Building (BSW - Table 8-2b). No other chemicals are listed in the inventory for the BSW. The revised CAR has removed the description of the Uranium Dissolution Unit. On page 11.9-62, the CAR contains a description of a uranyl nitrate reagent system. The CAR states the uranyl nitrate solution is stored in drums in the BSW and moved by truck to the AP building. No inventory information is provided for the uranyl nitrate solution. The Environmental Report mentions a usage of 3,660 gallons of uranyl nitrate solution per year. However, other parts of the revised CAR (e.g., pages 11.3-10 and 11.3-17) indicate the addition of depleted uranium (DU) from the Uranium Dissolution Unit.

6) Section 8.4, "Chemical Accident Consequences"

Clarify the assumptions for the chemical accident analysis.

Parts 70.22(a) and 70.22(f) require a description of equipment, facilities, PSSCs, and design bases that protect health and minimize danger to life and property, and a safety assessment of the PSSCs and design bases. Part 70.61 requires compliance with the performance requirements. Part 70.64(a)(5) requires the applicant to address the BDC for chemical safety.

The revised CAR lists assumptions for chemical accident consequence analysis on page 8-11. Several assumptions have been deleted. There have also been some changes to the implied assumptions on pages 8-7 and 8-8. Please identify if there are any additional assumptions (e.g., temperature, meteorology) that should be added in place of those deleted and if very low air speeds (circa 0.1 m/sec or less) can still be present in some of the areas within the Mixed Oxide Fuel Fabrication Facility(MFFF).

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