

May 28, 2003

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

SUBJECT: MAY 2003 MONTHLY OPEN ITEM STATUS REPORT

Dear Mr. Hastings:

The purpose of this letter is to update Duke Cogema Stone & Webster (DCS) on the status of the U.S. Nuclear Regulatory Commission's (NRC's) review of the Mixed Oxide Fuel Fabrication Facility Construction Authorization Request (CAR). The last Monthly Open Item Status Report was issued in March 2003. The status for April 2003 was provided in the staff's revised Draft Safety Evaluation Report (DSER) dated April 30, 2003.

The attached table provides the status of the staff's review of open items. The table contains the 19 open items identified in Appendix A of the April 30, 2003 DSER. The figure showing the closure of open items since April 2002 has been retained and shows the disposition of the original 66 open items.

More information about some of the items in this report are provided in separate meeting summaries.

Sincerely,  
**/RA/**

Andrew Persinko, Sr. Nuclear Engineer  
Special Projects and Inspection Branch  
Division of Fuel Cycle Safety  
and Safeguards  
Office of Nuclear Material Safety  
and Safeguards

cc: J. Johnson, DOE  
H. Porter, SC Dept. of HEC  
J. Conway, DNFSB  
L. Zeller, BREDL  
G. Carroll, GANE  
D. Curran, Esq., DCS  
D. Silverman, Esq., GANE

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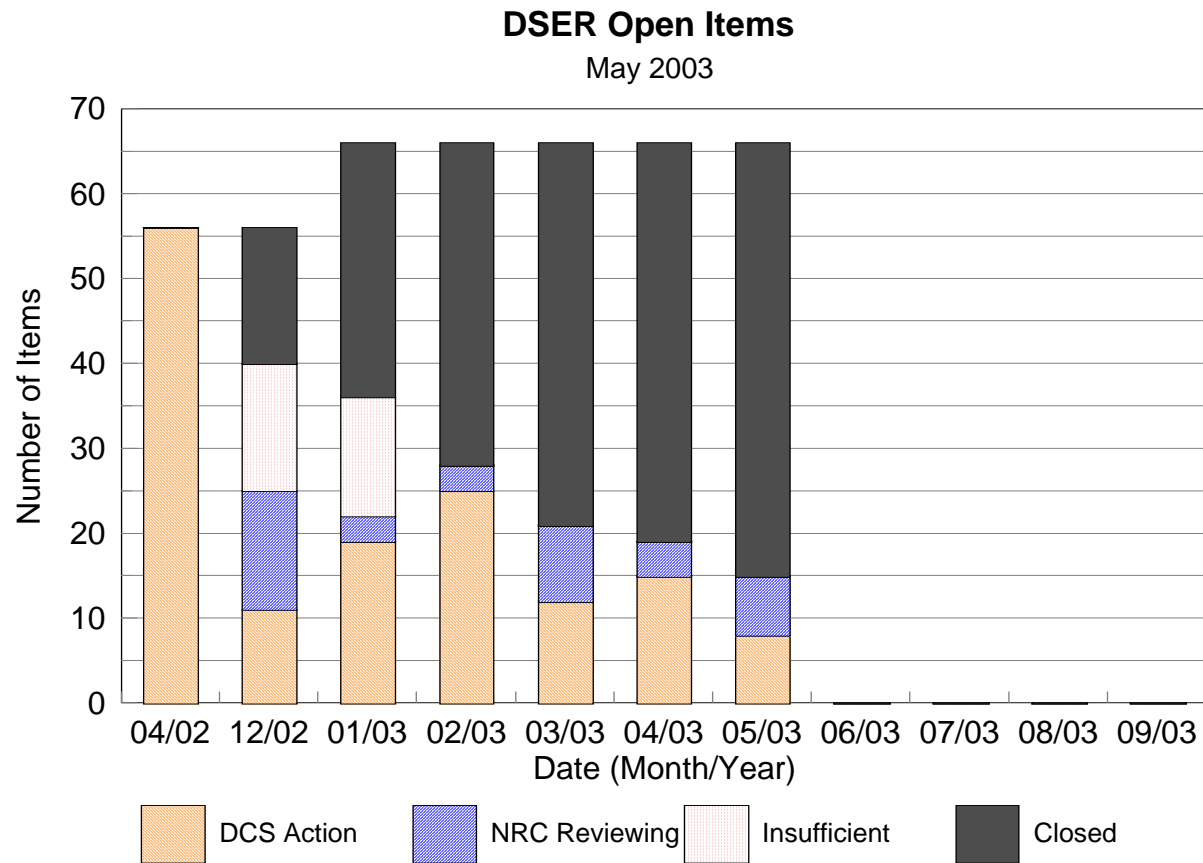
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## NRC Monthly Open Item Status Report: MFFF Construction Authorization Request

Status of Open Items since the NRC's Draft Safety Evaluation Report was issued on April 30, 2002.



## NRC Monthly Open Item Status Report: MFFF Construction Authorization Request

Category 1) DCS action to address = OPEN

Category 2) DCS addressed, Staff reviewing = OPEN

Category 3) CLOSED - DCS addressed, Staff accepts

Item No.	DSER Section	DSER Open Item Description	DCS Response	NRC Finding / Estimated Review Completion Date	Current Status
FQ-1	2.0	Provide information on project design costs. (Revised DSER Section 2.1.1)	2/18/03 letter	Acceptable per SRP § 2.4.3	CLOSED
FQ-2	2.0	Update financial statements (Revised DSER Section 2.1.2)	2/18/03 letter	Acceptable per SRP § 2.4.3	CLOSED
NCS-4	6.0	Determination of Design Basis USLs for each process type, and determination of normal condition subcritical margin. Clarification of DCS' commitment to the preferred use of dual parameter control. (DSER Section 6.1.3.4.2 and 6.1.3.5.1)	Revised CAR 6.0 01/16/03 meeting 03/20/03 meeting	April 2003 DSER - DCS action	OPEN
FS-1	7.0	The ability of the final C4 and C3 HEPA filters to perform their safety function when considering soot loading, has not been adequately demonstrated (DSER Section 7.1.5.5)	2/18/03 letter 4/10/03 letter	NRC Reviewing/ 6/30/03	OPEN
FS-2	7.0	The margin of safety of the fire barriers has not been adequately resolved. (DSER Section 7.1.5.6)	CAR 7.4 2/6-7/03 meeting 2/18/03 letter 5/14/03 letter	NRC Reviewing/ 6/30/03	OPEN
CS-1	8.0	The staff concludes that the red oil phenomena analysis in Chapter 5.5 of the CAR is not complete and that PSSCs and their design bases for preventing red oil explosions are not adequate for all potentially affected components. At a minimum, this applies to the following areas: purification, solvent recovery, calciner, oxalic mother liquor, acid recovery, and offgas. (DSER Section 8.1.2.5.2.5)	CAR 5.5.2.4.6.7 CAR 8.5 2/7/03 Meeting 4/8/03 CAR page changes	NRC Reviewing/ 6/30/03	OPEN

## NRC Monthly Open Item Status Report: MFFF Construction Authorization Request

Category 1) DCS action to address = OPEN

Category 2) DCS addressed, Staff reviewing = OPEN

Category 3) CLOSED - DCS addressed, Staff accepts

Item No.	DSER Section	DSER Open Item Description	DCS Response	NRC Finding / Estimated Review Completion Date	Current Status
CS-2	8.0	The staff concludes that the HAN/hydrazine analysis in Chapter 5.5 of the CAR is not complete and that PSSCs and their design bases for preventing HAN/hydrazine explosions are not adequate for all potentially affected units and components. At a minimum this applies to the following areas: purification event, recovery, offgas. (DSER Section 8.1.2.5.3.2)	CAR 5.5.2.4.6.4 CAR 8.5.1.3	April 2003 DSER - DCS action	OPEN
CS-3	8.0	The staff concludes that the HAN/hydrazine analysis in Chapter 5.5 of the CAR is not complete and that PSSCs and their design bases for preventing azide formation and potential explosions are not adequate for all potentially affected units and components. (DSER Section 8.1.2.5.3.3)	CAR 5.5.2.4.6.10 CAR 5.5.2.4.6.11 CAR 8.5.1 05/23/03 letter	NRC Reviewing 6/30/03	OPEN
CS-5b	8.0	Rather than reference TEEL levels, numerical values for which are subject to frequent updates and changes, provide commitment to and justification for specific hazardous chemical concentrations (or other exposure values) to meet 70.61 performance requirements.	2/18/03 letter	NRC Reviewing 6/30/03	OPEN
		Additional information on indoor windspeed values needed.	02/18/03 letter	April 2003 DSER - DCS action	
CS-9	8.0	The applicant has not provided a solvent temperature design basis with sufficient margin. (DSER Section 8.1.2.5.2.2)	Response pending	April 2003 DSER - DCS action	OPEN
CS-10	8.0	A suitable design basis for habitability in the Emergency Control Room has not been identified. (DSER Section 8.1.2.6.1)	CAR 11.4.11.1.16 2/18/03 letter	April 2003 DSER - DCS action	OPEN

Item No.	DSER Section	DSER Open Item Description	DCS Response	NRC Finding / Estimated Review Completion Date	Current Status
AP-2	11.2	With respect to the electrolyzer, the applicant's hazard and accident analysis did not consider fires and/or explosions caused by ignition of flammable gases generated by chemical reactions and/or electrolysis, such as from an overvoltage condition. This applies to the dissolution and silver recovery units (DSER Sections 11.2.1.3.3)	CAR 5.5.2.4.6.13 1/15/03 meeting 2/18/03 letter	NRC Reviewing 6/30/03	OPEN
AP-3	11.2	The applicant's hazard and accident analysis did not include events involving titanium, such as titanium fires. Accident events should be evaluated and PSSCs identified as necessary. This applies to the dissolution and silver recovery units (DSER Sections 11.2.1.2 and 11.2.1.3.4)	CAR 7.2.2 2/6-7/03 meeting 5/23/03 letter	NRC Reviewing 6/30/03	OPEN
AP-7	11.2	Parameters have not been identified for the plutonium feed to the facility. PSSCs and design bases should be identified for this feed material or a justification provided that it is not necessary (DSER Section 11.2.3.1)	CAR 11.3.7	Acceptable per SRP § 8.4.3	CLOSED
AP-8	11.2	A design basis and PSSCs are needed for flammable gases and vapors in the Offgas unit (DSER Section 11.2.1.3.10)	Response pending	April 2003 DSER - DCS action	OPEN
AP-9	11.2	A design basis and PSSCs are needed for maintaining temperatures below the solvent flashpoint (DSER Section 11.2.1.3.10)	Response pending	April 2003 DSER - DCS action	OPEN
AP-10	11.2	Provide a design basis and PSSCs for removal of potentially toxic or reactive gases in the Offgas unit (DSER Section 11.2.1.3.10)	Response pending	April 2003 DSER - DCS action	OPEN
MP-1	11.3	PSSC and design basis information associated with the pyrophoric nature of some UO <sub>2</sub> powders (DSER Section 11.3.1.2.1)	CAR 8.5.1.6 2/18/03 letter	NRC reviewing response to FS-1/ 6/30/03	OPEN
VS-1	11.4	Justify the use of a leak path factor of 1E-4 for two banks of HEPA filters under accident conditions (DSER Section 11.4.1.3)	02/18/03 letter	Acceptable, per SRP §11.4.5.2	CLOSED

## Narrative of Open Items, May 2003

FQ-1, FQ-2. Staff has re-evaluated DCS's response dated February 18, 2003, and concludes that DCS has met the applicable regulatory requirements. These items are now closed.

NCS-4. DCS will provide a description of the methodology for determining the normal case subcritical margin. DCS must also clarify the commitment to the use of dual-parameter control, or provide justification for single-parameter control.

FS-1. Staff is reviewing DCS letters dated February 18, 2003 and April 10, 2003.

FS-2. Staff is reviewing DCS letter dated May 14, 2003.

CS-1. Staff continues to review the safety strategy described during the February 6-7, 2003 meeting and provided in April 8, 2003, page changes to the CAR.

CS-2. DCS will provide a report on the HAN/hydrazine safety strategy.

CS-3. Staff is reviewing DCS letter dated May 23, 2003.

CS-5b. NRC continues to review DCS's proposal to use TEELs as chemical consequence levels of concern. DCS should select conservative values for process cell air speeds in calculations that show evaporation of chemical spills are low consequence events. DCS should also consider bulk convection and flashing effects upon evaporation.

CS-9. DCS should propose a design basis limit for solvent temperature with more margin than 50% of the LFL.

CS-10. DCS should commit to RG 1.78-listed IDLH values as a basis for control room habitability assessments. Where IDLH values are not available, DCS should rely on an expert chemical hygienist to propose alternate limits.

AP-2. Staff continues to review the safety strategy described during the February 6-7, 2003 meeting and provided in April 8, 2003, page changes to the CAR.

AP-3. Staff is reviewing DCS letter dated May 23, 2003.

AP-7. Staff has re-evaluated the consequences of a postulated event involving the inadvertent feed of alternate feedstock to the KDB electrolyzer. Staff finds that this is a low consequence event. This open item is closed.

AP-8. DCS should propose a design basis limit for flammable gases and vapors in the offgas unit with more margin than 50% of the LFL.

AP-9. DCS should propose a design basis limit for temperatures below the solvent flashpoint with more margin than 50% of the LFL.

AP-10. DCS should address design basis requirements for protection of the HEPA filters from reactive gases in the offgas system. DCS should address design basis requirements for protection of the site worker from toxic gases in the offgas system.

MP-1. Staff continues its review of issues formerly identified as MP-1 under open item FS-1.

VS-1. Staff have completed the analysis of information provided February 18, 2003, and April 10, 2003. This item is closed.