

July 8, 2003

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

SUBJECT: JUNE 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 May 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., GANE  
D. Silverman, Esq., DCS

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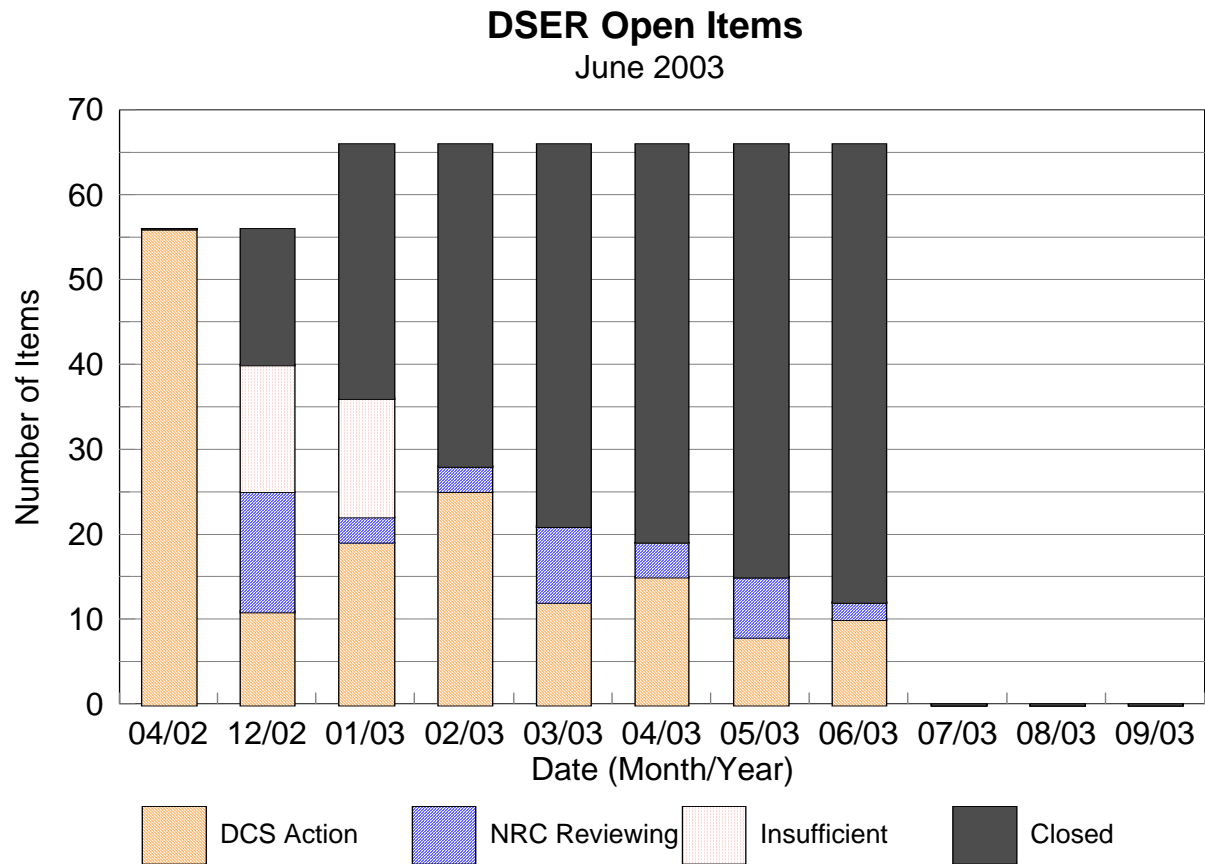
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|             |           |  |           |  |           |  |           |
|-------------|-----------|--|-----------|--|-----------|--|-----------|
| <b>OFC</b>  | SPIB*     |  | SPIB*     |  | SPIB*     |  | SPIB*     |
| <b>NAME</b> | DBrown    |  | APersinko |  | LGross    |  | BSmith    |
| <b>DATE</b> | 07/ 7 /03 |  | 07/ 7 /03 |  | 07/ 8 /03 |  | 07/ 8 /03 |

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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<br>01/16/03 meeting<br>03/20/03 meeting<br>06/13/03 letter<br>06/25/03 RAI  | 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<br>4/10/03 letter  | Acceptable per SRP § 7.4.3                     | CLOSED         |
| 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<br>2/6-7/03 meeting<br>2/18/03 letter<br>5/14/03 letter                             | DCS action                                     | 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<br>CAR 8.5<br>2/7/03 Meeting<br>4/8/03 CAR page changes<br>6/2-4/03 Meeting | DCS action                                     | 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<br>CAR 8.5.1.3<br>05/30/03 letter<br>06/2-4/03 meeting | NRC Reviewing<br>7/30/03                       | 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<br>CAR 5.5.2.4.6.11<br>CAR 8.5.1<br>05/23/03 letter   | Acceptable per SRP<br>§ 8.4.3                  | CLOSED         |
| 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<br>7/30/03                       | OPEN           |
|          |              | Additional information on indoor windspeed values needed.  | 02/18/03 letter<br>6/2-4/03 meeting                                    | Acceptable per SRP<br>§ 8.4.3                  | CLOSED         |
| 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   | 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<br>2/18/03 letter<br>06/2-4/03 meeting                | 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<br>1/15/03 meeting<br>2/18/03 letter               | DCS action                                     | 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<br>2/6-7/03 meeting<br>5/23/03 letter<br>6/2-4/03 meeting | DCS action                                     | 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  | 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  | 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)  | 5/30/03 letter  | Acceptable per SRP §8.4.3                      | CLOSED         |
| 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<br>2/18/03 letter                                       | DCS action                                     | 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, June 2003

NCS-4. Per the June 25, 2003 Request for Additional Information, DCS must resolve questions pertaining to the validation reports.

FS-2. DCS must demonstrate the structural integrity of fire barriers during fires with rapid heat rise.

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. DCS should provide SRS H-canyon authorization basis documentation pertaining to red oil phenomena. DCS will revise the CAR to correct the steam temperature from 135 C to 133 C.

CS-2. Staff continues to review the safety strategy described in the DCS May 30, 2003 letter. Staff has asked DCS to provide the references cited in the May 30, 2003 letter.

CS-5b. NRC continues to review DCS's proposal to use TEELs as chemical consequence levels of concern.

CS-9, AP-2, AP-8 and AP-9. DCS should propose a design basis limit for solvent temperature with more margin than 50% of the LFL.

CS-10. DCS to provide page changes to the CAR containing a table of design basis values for control room habitability. These will be based on IDLH values. Where IDLH values are not available, DCS should rely on TEEL - 2 values.

AP-3. DCS to provide clarification of a reference cited in the DCS May 23, 2003 letter. Staff is reviewing the design basis code (NFPA 70) cited in the DCS May 23, 2003 letter.

AP-10. HEPA filter replacement intervals following exposure to water or chemicals will be established as part of the maintenance program and evaluated during the review of the possession and use license application.

MP-1. Staff has de-coupled this open item from FS-1, which is now closed. DCS should provide additional information on the uranium burnback hazard.