

July 16, 2003

MEMORANDUM TO: Kathy Halvey Gibson, Acting Chief
Special Projects and Inspection Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Thru: Brian W. Smith, Acting Chief /RA/
Special Projects Section
Special Projects and Inspection Branch
Division of Fuel Cycle Safety
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FROM: David Brown, Health Physicist /RA/
Special Projects Section
Special Projects and Inspection Branch
Division of Fuel Cycle Safety
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Office of Nuclear Material Safety
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SUBJECT: JUNE 25, 2003 SUMMARY OF PHONE CALLS WITH THE APPLICANT:
RESOLUTION OF OPEN ITEMS IN THE APRIL 30, 2003 DRAFT
SAFETY EVALUATION REPORT FOR THE MIXED OXIDE (MOX) FUEL
FABRICATION FACILITY

On June 25, 2003, the U.S. Nuclear Regulatory Commission (NRC) reviewed outstanding open items with Duke Cogema Stone & Webster (DCS) via phone. The open items are associated with the Revised Construction Authorization Request (CAR) for the Mixed Oxide Fuel Fabrication Facility (MFFF) submitted by DCS on October 30, 2002. The purpose of this memorandum is to document questions asked by NRC and answers provided by DCS, and additional actions to be taken by the staff and DCS. With respect to the questions in the attachment, most were asked previously whereas some were provided to DCS for the first time (e.g., those resulting from continuing staff review of the CAR and DCS's recent responses to staff's open items).

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

The following requests were made by Brian Smith and David Brown during a 3:00 pm phone call with Ken Ashe, DCS License Application Manager:

<u>Open Items</u>	<u>Request / Response</u>
CS-01	<p><i>Provide copies of the Savannah River Site Authorization Basis documents for the H-canyon evaporator(s), including Safety Analysis Reports, DOE Safety Evaluation Reports, Unreviewed Safety Questions, Bases for Interim Operation, Justification for Continued Operation, Technical Safety Requirements, and Operational Safety Requirements, as applicable.</i></p> <p>DCS will review the request and ascertain whether the information is available for public release.</p>
CS-02	<p><i>NRC staff requested a site visit to review the computer models and supporting documentation for the design basis parameters and values proposed for prevention of a HAN runaway reaction.</i></p> <p>DCS stated that the documentation supporting the design basis parameters and values for the HAN runaway reaction is not complete. However, DCS will accommodate the request, after staff requests a specific date for the site visit. Staff will arrange a date and inform DCS.</p>

The following questions were asked by David Brown during a phone call starting at 3:30pm. In attendance were Brian Smith, Bill Troskoski, Fred Burrows, Norma Garcia-Santos, Alex Murray, and Kathy Gibson of NRC; and Ken Ashe, Marc Klasky and Gary Kaplan of DCS:

<u>Open Items</u>	<u>Question / Answer</u>
CS-01	<p><i>Has DCS verified COGEMA, France and Savannah River Site steam operating temperatures in vessels where red oil is a concern?</i></p> <p>DCS has verified COGEMA, France steam operating temperatures of 135 C where red oil is a concern. DCS has not yet received complete documentation pertaining to operations at the Savannah River Site.</p> <p><i>Has DCS resolved the discrepancy in the steam operating temperature? A 133 C steam operating temperature is described in the clarifying information provided to NRC in a meeting February 6-7, 2003, and a 135 C steam operating temperature is described in the CAR.</i></p> <p>DCS will revise the CAR to reflect a 133 C steam operating temperature, as described in clarifying information provided on February 6-7, 2003.</p>
CS-02	<p><i>Will DCS provide references cited in the May 30, 2003 letter?</i></p> <p>DCS will consider the request. On June 26, 2003, David Brown faxed the list of references to Ken Ashe that staff has had difficulty obtaining in a timely manner.</p>

CS-02
(continued) *In the CAR, p. 5.5-35, the safety function of the process safety control subsystem is to control the liquid flow rate into the oxidation column, thereby regulating the quantity of HAN, hydrazine nitrate and hydrazoic acid added to the column ensuring the potential heat evolution and pressure increase do not exceed the design capabilities of the process vessel. However, in the May 30, 2003 letter, Enclosure 1, second paragraph under item 1.2, DCS omits this control. Clarify whether DCS intended to discontinue flowrate controls as a safety function of the process safety control subsystem.*

DCS explained that it intends to discontinue flow rate controls as a safety function of the process safety control subsystem. DCS explained that the rapid reaction rates in the oxidation column are such that control of flow rate is not required. Staff may follow up later with additional questions.

CS-10 *Has DCS drafted a table for Chapter 8 of the CAR to include Emergency Control Room chemical hazard habitability limits based on IDLHs and TEEL-2s?*

DCS continues to prepare this table for NRC review.

Will DCS also adopt a 2-minute time limit to don protective equipment, as per RG 1.78?

DCS has not addressed the 2-minute time limit, as per RG 1.78, in its draft response. Staff may have additional questions after the DCS response is submitted.

CS-9, AP-2,
AP-8, AP9 *What is DCS's response to the NRC position that a design basis limit for flammable gas should be 25% of the LFL or an equivalent flashpoint temperature?*

DCS has reviewed the staff's position and technical basis documents and disagrees with the staff's position. DCS concludes that 50% of the LFL is an acceptable design basis for flammable solvents. DCS further concludes that 25% of the LFL is an acceptable set point. For other flammable gases, DCS concludes that NFPA 69 supports a limit of up to 60% of the LFL, if instrumentation and interlocks are provided. DCS stated they are using instrumentation and interlocks, and thus propose a 50% design basis limit. Staff encouraged DCS to complete its response and submit it for NRC review.

AP-3 *Can DCS explain the reference to the Feb. 18 letter that was in Enclosure 1, page 2, of the May 23 letter?*

DCS will revise and resubmit a response to AP-3 that corrects the reference to the February 18, 2003 DCS letter to NRC.

AP-3 *With respect to the DCS letter dated May 23, 2003 on this open item, can DCS
(continued) explain which part of NFPA 70 applies to overvoltage protection of electrolyzers?*

DCS responded in a phone call June 26, 2003 that NFPA 70 sections 210-20, "Overcurrent Protection," 240-13, "Ground Faults," and 240-12, "Electrical System Coordination" would be the applicable sections for protection of the electrolyzers from fire. Staff will review the response and may have additional questions at a later date.

AP-3 (continued) *With respect to the DCS letter dated May 23, 2003 on this open item, can DCS explain which part of NFPA 70 applies to overvoltage protection of electrolyzers?*

DCS responded in a phone call June 26, 2003 that NFPA 70 sections 210-20, "Overcurrent Protection," 240-13, "Ground Faults," and 240-12, "Electrical System Coordination" would be the applicable sections for protection of the electrolyzers from fire. Staff will review the response and may have additional questions at a later date.

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