

August 19, 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  
and Safeguards, NMSS

FROM: William M. Troskoski, Senior Chemical Engineer */RA/*  
Special Projects Section  
Special Projects and Inspection Branch  
Division of Fuel Cycle Safety  
and Safeguards, NMSS

SUBJECT: AUGUST 13, 2003, CONFERENCE CALL SUMMARY: MIXED OXIDE  
FUEL FABRICATION FACILITY OPEN ITEMS

On August 13, 2003, a conference call was held between Peter Hastings, Gary Kopel, Mark Klasky, and others of Duke Cogema Stone & Webster (DCS) and Kathy Halvey Gibson, Brian Smith, William Troskoski, and Norma Garcia-Santos of the U.S. Nuclear Regulatory Commission (NRC) to discuss selected open items related to the MOX Construction Authorization Request (CAR) open items. DCS requested clarification regarding the following three items:

1. MP-01, Uranium Burnback

DCS stated that they had performed preliminary calculations demonstrating that the "burnback" of 3.6 Kg of  $UO_2$  to  $U_3O_8$  would result in a maximum HEPA filter temperature of 700°F, which is much less than the 850°C filter binder failure. DCS indicated that they believed it was unrealistic for such an amount of  $UO_2$  to be released, travel through the actual ventilation system, and deposit of the HEPA filters, where it would fully burnback. In order to assure that DCS fully understood all NRC staff concerns before providing a formal reply, DCS requested that NRC provide documented question(s) that frame any remaining staff concerns. NRC agreed to ensure that the meeting summary of the July 29 - August 1, 2003, public meeting adequately reflected the staff's concerns and remaining questions.

2. CS-10, Control Room Habitability

DCS reiterated their commitment to protecting control room habitability through the use of isolation dampers should hazardous chemicals be detected in the air intakes above immediate danger to life and health (IDLH) and temporary emergency exposure limit (TEEL) values and provide self-contained-breathing apparatus, should it be needed, in order to assure that operations personnel could continuously staff the control room and perform their safety functions in the event of a chemical release. The staff found this acceptable. However, the staff noted that Regulatory Guide 1.78 recommends that operators be able to don the protective gear within two minutes of detecting a hazardous chemical concentration at the IDLH limit. DCS has not addressed this timeframe. During the conference call, DCS stated that this issue would be more appropriately addressed during the Integrated Safety Assessment phase and that it had no impact on the design of the facility. NRC staff stated that they understood DCS's position, and would complete NRC's evaluation shortly.

3. CS-09, AP-02, -08 and -09, Lower Flammability Limits

Industry practice is to use 25% of the lower flammability limits (LFL) or up to 60% of the LFL if interlocks are provided. DCS was asked to identify principal structures, systems, and components for interlocks and describe their purpose and justify the higher levels. NRC clarified that radiolysis effects would have to be considered.

In addition to the above, the status of the remaining open items were discussed. Also, NRC staff raised a question concerning the different forms of the  $k_{\text{redhyd}}$  kinetic constant in the DCS submittals of May 30, 2003, and July 28, 2003. DCS agreed to clarify the matter. The clarification was provided by DCS in a subsequent call on August 14, 2003. The reason for the difference was two fold. First, several of the constants in the exponential were factored out. Secondly, part of the second exponential function was inadvertently "cut off" when transferring the equation to the DCS July 28, 2003, submittal. The information provided addressed the staff's question.

cc: P. Hastings, DCS  
L. Zeller, BREDL  
G. Carroll, GANE  
J. Johnson, DOE

J. Conway, DNFSB  
D. Curran, GANE  
D. Silverman, DCS  
H. Porter, SCDHEC

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Docket: 70-3098

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