

July 23, 2010

Dr. Said Abdel-Khalik, Chairman
Advisory Committee on Reactor Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: RESPONSE TO THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
LETTER DATED JUNE 16, 2010, ON REVISION 1 TO THE "STANDARD REVIEW
PLAN FOR REVIEW OF A LICENSE APPLICATION FOR A FUEL CYCLE
FACILITY" (NUREG-1520)

Dear Dr. Abdel-Khalik:

On behalf of the U.S. Nuclear Regulatory Commission (NRC), I am responding to your letter dated June 16, 2010, regarding recommendations of the Advisory Committee on Reactor Safeguards (ACRS) on Revision 1 of NUREG-1520, "Standard Review Plan for Review of a License Application for a Fuel Cycle Facility," issued May 2010. Specifically, your letter recommended that "explicit consideration of fire induced 'hot shorts' be included in the guidance for the review of applications for fuel cycle facilities."

In the April 16, 2010, response to previous ACRS comments on Revision 1 of NUREG-1520, the NRC staff committed to evaluating the potential for fuel cycle events related to fire-induced "hot shorts." Currently, staff from the NRC's Office of Nuclear Material Safety and Safeguards is collaborating with the NRC's Office of Nuclear Regulatory Research in developing a path forward on this issue.

The physical arrangement of process power and control cables at a fuel cycle facility is substantially different from that at a nuclear power plant. Furthermore, many differences exist between individual fuel cycle facilities, unlike nuclear power plants. The staff's preliminary review suggests that a facility-by-facility, process-by-process type of analysis may be needed before conclusions on the risk significance and acceptable approaches for considering hot shorts can be reached. Although some of the fire research conducted for specific types of cables may have direct applications to fuel cycle facilities, additional analysis is needed to determine whether the potential impact on risk is on the same scale as at nuclear power plants.

License applicants for fuel cycle facilities are required to prepare an integrated safety analysis (ISA), as established in 10 CFR Part 70, and as outlined in Chapter 3 of Revision 1 of NUREG-1520. As the committee is aware, an ISA identifies potential accident sequences in the facilities' operation and designates items relied on for safety (IROFS) to either prevent such accidents or mitigate their consequences to an acceptable level. If fire-induced hot shorts were identified as a contributor to a potential accident sequence for a fuel cycle facility application, then that facility's ISA would be required to designate IROFS accordingly.

It is unclear if existing fuel cycle facility licensees have considered fire-induced hot shorts in their current ISAs. Licensees may have screened out fire-induced hot shorts because they were not considered contributors to potential accident sequences. However, licensees are

required to evaluate any changes in process safety information that may alter the parameters of an accident sequence. It has yet to be determined whether the consideration of fire-induced hot shorts could create any new accident sequences or alter parameters for previously analyzed events.

The NRC staff is committed to the explicit consideration of fire-induced hot shorts at fuel cycle facilities. If the staff's evaluation dictates that explicit guidance be provided, the staff intends to provide this guidance in future generic communications.

I appreciate the comments and recommendations provided by the ACRS and look forward to continuing to work with the Committee as the staff evaluates future updates to our standard review plans and staff guidance.

Sincerely,

/RA/

R. W. Borchardt
Executive Director
for Operations

cc: Chairman Jaczko
Commissioner Svinicki
Commissioner Apostolakis
Commissioner Magwood
Commissioner Ostendorff
SECY

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