May 7, 2010

MEMORANDUM TO: Michael D. Tschiltz, Deputy Director
Fuel Facilities Licensing Directorate
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

THRU: Brian W. Smith, Chief **/RA/**
Uranium Enrichment Branch
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Office of Nuclear Material Safety
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FROM: Timothy C. Johnson, Project Manager **/RA/**
Uranium Enrichment Branch
Division of Fuel Cycle Safety
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Office of Nuclear Material Safety
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SUBJECT: APRIL 15, 2010, TELEPHONE SUMMARY: GENERAL ELECTRIC-HITACHI REQUESTS FOR ADDITIONAL INFORMATION RESPONSES

On April 15, 2010, the U.S. Nuclear Regulatory Commission (NRC) staff held a telephone conference call with staff from General Electric-Hitachi (GEH) to discuss the responses to Requests for Additional Information (RAIs) in the Fire Protection, Management Measures, and Decommissioning areas applicable to the GEH application for a laser-based uranium enrichment facility. The RAI responses were transmitted to NRC on December 28, 2009, and January 13, 2010.

CONTACT: Timothy Johnson, NMSS/FCSS
(301) 492-3121

I am attaching the telephone summary for your use. No proprietary or classified information is discussed.

Docket No.: 70-7016

Enclosure: GEH Telephone Summary

cc: William Szymanski/DOE
Patricia Campbell/GEH
Robert Brown/GEH
Tammy Orr/GEH
Mike Giles/CFC
Tom Clements/FOTE
David Springer/CFRW
Stephen Rynas/NCDENR
Jennifer Braswell/New Hanover County
Christopher O'Keefe/New Hanover County
Lafayette Atkinson/NCOSH
Mathew Allen/GEH
Bruce Shell/New Hanover County
Marty Lawing/Brunswick County
George Brown/Pender County
Bill Saffo/Wilmington
Malissa Talbert/Wilmington
Wanda Lagoe/NCOSH
Cameron Weaver/NCDENR
Emily Hughes/USACE
Lee Cox/NCDENR
David Weaver/New Hanover County
Julie Olivier/GEH
Jerald Head/GEH

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NAME	TCJohnson	TRichmond	RWescott	SCleavenger	BSmith
DATE	04/19/10	04/19/10	04/20/10	05/03/10	05/07/10

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Telephone Conference Call Summary

General Electric-Hitachi Uranium Enrichment Facility
Fire Protection, and Management Measures, and Decommissioning
Responses to Requests for Additional Information

DATE AND TIME: April 15, 2010; 10:00 AM

CALL PARTICIPANTS:

T.C. Johnson/NRC	R. Wescott/NRC
S. Cleavenger/NRC	D. Arroyo/NRC
J. Olivier/GEH	S. Painter/GEH
S. Lee/GEH	D. Norris/GEH
S. Chappelle/GEH	A.M. Marshall/GEH
D. Hamilton/GEH	G. Mancuso/GEH

On April 15, 2010, a conference call between U.S. Nuclear Regulatory Commission (NRC) and General Electric-Hitachi (GEH) staffs was held to discuss responses to the Requests for Additional Information (RAIs) in the Fire Protection, Management Measures (MM), and Decommissioning areas applicable to GEH's license application for a laser-based uranium enrichment facility. The RAI responses applicable to this conference call had been transmitted to NRC on December 28, 2009, and January 13, 2010.

DISCUSSION:

Management Measures

NRC and GEH staff discussed clarifications in the applicant's responses to questions concerning RAI numbers MM-8 and MM-9.

MM-8 asked the applicant to explain the factors considered in determining the contribution of items relied on for safety (IROFS) to risk reduction. GEH staff responded that it had reevaluated the concept of "graded approach" and that the difference between Quality Level (QL)-1 and QL-2 IROFS is in the application of the MM to assure that sole IROFS maintain reliability with a failure frequency of 10^{-5} per year, or less. GEH staff stated that it would remove the terminology of "graded approach" from Section 11.8.2 of the license application and indicated that it would apply the appropriate rigor for each management measure.

MM-9 had asked the applicant how MM would be applied to QL-1, QL-2, and QL-3 IROFS. In its response, GEH staff stated that: (1) QL-1 applies to single IROFS (sole IROFS) that are needed to prevent or mitigate a high consequence event and that all MM and Quality Assurance (QA) Program elements are applied to QL-1 IROFS; and (2) QL-2 applies where two or more IROFS are credited to prevent or mitigate a high consequence event, or any single IROFS (sole IROFS) is credited in preventing or mitigating an intermediate consequence event. For QL-2 IROFS, MM and QA program requirements are applied using a graded approach, which is implemented through approved procedures.

During the call, the staff asked for clarification with respect to GEH's plans for implementing a graded approach to MM and QA elements. Specifically, the staff identified that the process was unclear as presented in the License Application (LA) and RAI responses.

The introduction to Section 11, "Management Measures," of Revision 1 of the LA states that GEH, "applies management measures in a graded approach based on unmitigated risks as described in the ISA Summary." Section 11.8.2, "Quality Assurance Program," of Revision 1 of the LA states that, "The QA Program is applied in a graded approach based on an item's importance to safety."

Section 11.8.2.1 of Revision 1 of the LA states that, "Management measures are applied to each QL-1 IROFS consistent with the type of IROFS to assure that the IROFS remains reliable at its credited failure frequency when called upon to be available. Also, all applicable QA Program requirements, as detailed in NEDE-33451, Quality Assurance Program Description, are applied to QL-1 IROFS in a manner necessary to achieve this goal."

Section 11.8.2.2 of Revision 1 of the LA states that, "Management measures are applied to QL-2 IROFS consistent with the type of IROFS to assure that the IROFS remains reliable at its credited failure frequency when called upon to be available. All applicable QA Program requirements are also applied to QL-2 IROFS in a manner necessary to achieve this goal." Section 11.8.2.2 continues to state that, "The extent that attributes of management measures and QA program elements are applied to QL-1 and QL-2 IROFS will be determined by evaluating the factors that contribute to reliability of each IROFS. The management measure and QA element attributes for those aspects of the activity that influence reliability of the IROFS will be determined by evaluating the design, function, and task analyses associated with operating and maintaining the IROFS and by assigning the characteristic to the attribute taking into consideration the following: risk significance; applicable regulations; industry codes, and standards, [etc.]"

During the call, the staff explained that based on the RAI responses and the changes submitted in Revision 1 to the LA, it was unclear whether a graded approach was being implemented by GEH for the application of MM and other QA elements to IROFS, and, if a graded approach was being used, there was not a very thorough description of it. GEH staff stated that it had procedures in place that characterized the GEH process for assigning MM and other QA elements to IROFS. GEH staff stated that it would revise its response to MM-8 and MM-9 to reflect that process and to be more descriptive.

Fire Protection

NRC and GEH staff discussed clarifications in the applicant's responses to questions concerning RAI numbers ISAS-FS-1, ISAS-FS-2, ISAS-FS-6, and ISAS-FS-7.

In the response to ISAS-FS-1, GEH staff is proposing to use sprinklers as IROFS. GEH staff will revise the Integrated Safety Analysis (ISA) Summary to credit sprinkler systems as IROFS in sequences requiring IROFS to meet performance requirements. A fire brigade response will no longer be an IROFS but will be defense-in-depth.

In ISAS-FS-2, GEH staff addressed a liquid fuel fire near a uranium hexafluoride cylinder. NRC staff asked if fuel volume limits would be established for cylinder transporters. GEH agreed to make fuel limits for transport vehicles separate IROFS and not combine with combustible

loading limits for dry combustibles. Dry combustible limits may be established by the Fire Hazard Analysis. GEH staff stated that liquid fuel limits will be stated in the ISA Summary for NRC approval. GEH staff will also contact NRC before finalizing its revisions to the ISA Summary.

In ISAS-FS-6, GEH staff addressed the laser cooling oils. The cooling oil flash point will likely go from a potential IROFS to a defense-in-depth control. Since there is no dispersible radioactive material in the laser area, the accident sequence will require an oil fire to propagate through the fire barrier and into an area protected by combustible loading limits and a sprinkler system (both IROFS). GEH staff considers that this accident sequence can be shown to be highly unlikely.

In ISAS-FS-7, GEH staff addressed an explosion in process areas. GEH proposed to categorize a release of material due to an explosion as not credible based on experiments with induced explosions. Because of uncertainties in this evaluation, NRC staff requested that the explosion be prevented using IROFS as is done with sintering furnaces in fuel fabrication plants. NRC also questioned how GEH will consider concentration limits if there are leaks. GEH staff indicated that will investigate further and revise the ISA Summary. GEH staff stated that it would contact NRC before finalizing.

Decommissioning

In the response to RAI D-1, GEH proposed a schedule for decommissioning the facility that exceeds the 24 month timeframe specified in Title 10 of the *Code of Federal Regulations* (10 CFR) 70.38(h). To complete the review, NRC needs the information specified in 10 CFR 70.38(i) to evaluate the alternative schedule proposed for decommissioning. GEH staff indicated that it would expand its discussion of the alternate decommissioning schedule and provide the requested information.

ACTION ITEMS:

GEH Committed to revise its response to MM-8 and MM-9 in order to provide a more detailed and clear description of its methodology for applying management measures and other QA elements to IROFS.