May 22, 2012

MEMORANDUM TO: Brian W. Smith, Chief
Uranium Enrichment Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

FROM: Timothy C. Johnson, Sr. Project Manager **/RA/**
Uranium Enrichment Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

SUBJECT: MAY 10, 2012, MEETING SUMMARY: GENERAL ELECTRIC-HITACHI PUBLIC MEETING ON SAFETY EVALUATION REPORT AND FINAL ENVIRONMENTAL IMPACT STATEMENT

On May 10, 2012, U.S. Nuclear Regulatory Commission (NRC) staff met with members of the public to discuss the NRC's Safety Evaluation Report and Final Environmental Impact Statement for the proposed General Electric-Hitachi Global Laser Enrichment LLC laser-based uranium enrichment plant project at the Burney Center at the University of North Carolina – Wilmington, Wilmington, North Carolina. I am attaching the Meeting Summary for your use. This summary contains no sensitive or classified information.

Docket No: 70-7016

Enclosure:
Meeting Summary

cc: See next page

CONTACT: Timothy Johnson, NMSS/FCSS
301-492-3132

cc:

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

MEMORANDUM TO: Brian W. Smith, Chief
Uranium Enrichment Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

FROM: Timothy C. Johnson, Sr. Project Manager
Uranium Enrichment Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

SUBJECT: MAY 10, 2012, MEETING SUMMARY: GENERAL ELECTRIC-HITACHI PUBLIC MEETING ON SAFETY EVALUATION REPORT AND FINAL ENVIRONMENTAL IMPACT STATEMENT

On May 10, 2012, U.S. Nuclear Regulatory Commission (NRC) staff met with members of the public to discuss the NRC's Safety Evaluation Report and Final Environmental Impact Statement for the proposed General Electric-Hitachi Global Laser Enrichment LLC laser-based uranium enrichment plant project at the Burney Center at the University of North Carolina – Wilmington, Wilmington, North Carolina. I am attaching the Meeting Summary for your use. This summary contains no sensitive or classified information.

Docket No: 70-7016

Enclosure:
Meeting Summary

cc: See next page

CONTACT: Timothy Johnson, NMSS/FCSS
301-492-3132

DISTRIBUTION:

FCSS r/f	SPB r/f	RidsNmssOd	RidsEdoMailCenter	RHannah/RegII
SMoore/NMSS	CHaney/NMSS	BStapleton/NSIR	CSafford/OGC	KHsueh/FSME
JWeil/OCA	RPelchat/RegII	KEverly/NSIR	DMcIntyre/OPA	
JLedford/RegII	TGody/Reg II	JHenson/RegII	DSeymour/RegII	
HYilma/FSME	MSimon/OGC	MBailey/NMSS	DDiaz-Toro/FSME	

GEH Website-YES

ML12138A098

OFFICE	FCSS/UEB	FCSS/UEB	FCSS/FMB by email	FCSS/FSME by email	FCSS/UEB
NAME	TCJohnson:	TRichmond	MBaker	JDavis	BSmith
DATE	05/ 18 /12	05/ 18 /12	05/ 18 /12	05/ 21 /12	05/22/12

OFFICIAL RECORD COPY

Summary of
General Electric-Hitachi Public Meeting on Safety Evaluation Report
and Final Environmental Impact Statement

DATE: May 10, 2012

PLACE: Ballroom A, Burney Center
University of North Carolina – Wilmington
Wilmington, North Carolina

ATTENDEES: See Attachment 1

PURPOSE:

The purpose of this meeting was to discuss the U.S. Nuclear Regulatory Commission's (NRC's) Safety Evaluation Report (SER) and Final Environmental Impact Statement (FEIS) for the proposed General Electric-Hitachi Global Laser Enrichment LLC (GLE) laser-based uranium enrichment plant project.

Discussion:

Mr. Chip Cameron, the meeting facilitator, welcomed those in attendance, introduced the speakers from the NRC staff, and presented the agenda for the meeting. Mr. Brian Smith also provided introductory remarks and stated that the purpose of the meeting was to discuss the NRC's recently issued SER and FEIS and to give members of the public an opportunity to ask questions about the documents.

Mr. Timothy C. Johnson discussed the project background saying that GLE had proposed to construct and operate a laser-based uranium enrichment plant at the General Electric Company site in Wilmington, North Carolina (see Attachment 2). The plant would be based on laser enrichment technology originally developed in Australia by Silex Ltd. He stated that the product of this plant would be used to fuel nuclear power plants. He also said that nuclear power plant fuel has uranium-235 (U-235) concentrations of 3 to 5 weight percent, which is substantially below the U-235 concentrations in nuclear weapons (greater than 90 weight percent U-235). Mr. Johnson said that GLE had submitted an Environmental Report in January 2009 and its License Application in June 2009. Based on the review of these documents, NRC prepared its SER and FEIS and issued them on February 28, 2012.

Mr. Johnson discussed a simple sketch of an enrichment plant showing the feed and withdrawal systems and the cascade. He discussed that natural uranium in the form of uranium hexafluoride (UF_6) is introduced into the cascade and that product and tails are withdrawn. He stated that the tails would go to the U.S. Department of Energy (DOE) for final disposition.

Mr. Johnson also showed an artist's rendition of the proposed plant. He stated that the Operations Building would have a footprint of 600,000 square feet and sections of it would be 160 feet high.

Mr. Johnson discussed the licensing process and stated that NRC is an independent agency that does not promote the development of nuclear technology. Its function is the regulation of

Enclosure

commercial uses of radioactive materials and has no role in regulating DOE defense activities, except for several DOE facilities specifically set out be Congress. He also stated that, for an enrichment facility, facility construction cannot begin until a license for construction and operations is issued. GLE may, however, perform pre-construction activities that do not have a nexus to NRC-regulated health and safety or security issues.

Mr. Johnson also talked about the Atomic Safety and Licensing Board hearings and that a hearing is required for uranium enrichment facilities. He said that no member of the public submitted a petition for a contested hearing, but there will be a mandatory hearing in which a three-member panel of administrative law judges will evaluate the adequacy of the NRC staff's safety and environmental reviews. He said that the mandatory hearing is now underway and the hearing board is scheduled to make a decision in August 2012. If the decision is positive to issuing a license, the license would be issued in September 2012.

Mr. Johnson then discussed the licensing review, which involved NRC safety and environmental staff and contractors. For the safety review, NRC staff followed review guidance in NUREG-1520, "Standard Review Plan for the Review of a License Application for a Fuel Cycle Facility." This guidance describes the areas to be reviewed and specific issues to be addressed for each of the review areas. For the environmental review, NRC staff followed guidance in NUREG-1748, "Environmental Review Guidance for Licensing Actions Associated with NMSS Programs." This guidance describes the information needed to address environmental requirements in the National Environmental Policy Act.

For the safety and environmental reviews, staff reviewed the Environmental Report and License Application submitted by GLE and issued requests for additional information and conducted meetings and conference call to discuss items requiring further clarification. GLE made revisions to its License Application as needed, and the NRC staff documented its review in the SER and FEIS.

Mr. Merritt Baker then discussed the NRC's safety review and stated that the safety review addressed the following areas:

1. General information;
2. Organization and administration;
3. Integrated safety analysis;
4. Radiation protection;
5. Nuclear criticality safety;
6. Chemical safety;
7. Fire safety;
8. Emergency preparedness;
9. Environmental protection;
10. Decommissioning;
11. Management measures;
12. Materials control and accounting;
13. Physical protection;
14. Transportation security;
15. Human factors engineering; and
16. Electrical and instrumentation and controls.

In the area of General Information, Mr. Baker stated that NRC's review addressed the general function of the proposed facility, financial qualifications to construct and operate the plant, foreign ownership and control, liability insurance, and the protection of classified matter.

Mr. Baker stated that, under the area of Organization and Administration, NRC staff reviewed GLE's proposed organization, management structure, and management training and qualification requirements.

For the review of the Integrated Safety Analysis (ISA) Summary, Mr. Baker discussed the NRC staff's review of the ISA Summary and the evaluation of radiological and chemical hazards. He also stated that, from the hazard analysis, GLE developed items relied on for safety (IROFS) to prevent or mitigate hazards that exceed the performance requirements in the Title10 *Code of Federal Regulations* (10 CFR) Part 70, Subpart H. In addition, management measures are required to ensure that IROFS will be reliable and available when needed. As part of the ISA review, NRC staff visited the GLE site and reviewed detailed information and calculations that supported the ISA. Staff concluded that sufficient information had been provided on the site, the facility processes, the hazards, and the types of accident sequences.

In the area of Radiation Protection, Mr. Baker discussed the NRC review of GLE's proposed program to protect workers and the public from radiological hazards. This program includes training, procedures, and radiological monitoring to ensure compliance with the radiation protection requirements in 10 CFR Part 20.

For nuclear criticality safety, Mr. Baker stated that GLE's proposed criticality safety program includes passive, active, and administrative measures to prevent inadvertent nuclear criticality, including the qualifications of staff to develop, implement, and maintain the program.

Under the areas of chemical and fire safety, Mr. Baker discussed the NRC staff review of GLE's proposed chemical and fire safety programs. These programs address chemical and fire hazards at the proposed facility and the safety controls to be applied to prevent or mitigate potential accidents.

Mr. Baker described the NRC staff's review of GLE's proposed emergency management program and execution of the GLE Emergency Plan. This program includes implementing its emergency management activities using written procedures and coordinating with off-site emergency response organizations.

In the area of Environmental Protection, Mr. Baker discussed the NRC staff's review of GLE's effluent and environmental monitoring programs and controls to ensure that release to the environment are as low as reasonably achievable.

For the Decommissioning chapter, Mr. Baker stated that GLE provided an adequate decommissioning funding plan, which included a site-specific cost estimate for decommissioning the facility and an acceptable financial assurance instrument in the form of a surety bond. The decommissioning cost estimate also included the costs for the final disposition of the depleted uranium tails from the enrichment process.

Mr. Baker said that GLE's proposed management measures include a program for managing changes to the facility, a maintenance program, a training program, and a process for ensuring that IROFS will be reliable and available when needed.

Mr. Baker also discussed the NRC review of GLE's proposed programs for Physical Security and Transportation Security. These programs ensure that radioactive materials will be secured from theft and diversion during plant operations and in transit. The GLE security program will also address protection of classified matter and the control and accounting of special nuclear material.

Mr. Baker said that GLE would also have a Human Factors Engineering program that addresses human factors in the design of the plant. This approach is also integrated into the ISA process to ensure that human factors are considered in the design of IROFS.

In the area of Electrical and Instrumentation and Controls, Mr. Baker discussed the NRC staff's review of electrical systems and the instrumentation and controls for safety systems. Mr. Baker stated that electrical systems are not required for safety systems, because the safety systems fail in a safe configuration if electrical power is lost. In addition, safety systems do not use digital controls or instrumentation.

Ms. Jennifer Davis next described the environmental review process and the NRC staff's findings documented in the FEIS. She noted that the environmental review and FEIS are part of NRC's decision-making process regarding the proposed GLE uranium enrichment facility. She also provided an overview of National Environmental Policy Act and described the proposed action considered within the FEIS.

Ms. Davis stated that once NRC accepted GLE's Environmental Report for detailed technical review, the NRC staff issued a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) and to conduct a scoping process. Following the NOI, the NRC staff conducted two public meetings in July 2009, to gather input from the public, other Federal, State and local agencies, and Tribal organizations on the scope of the EIS. She noted that comments received during the public scoping period were addressed by NRC staff and are presented in Appendix A of Final EIS. In June 2010, the NRC staff issued a Notice of Availability announcing the issuance of the Draft EIS for public review and comment. The NRC staff conducted two public meetings in June 2010 in Wilmington, North Carolina to gather comments on the Draft EIS. The public comment period ended on August 9, 2010.

Ms. Davis discussed the resource areas (i.e., land use, historic and cultural, visual and scenic, air quality, geology and soil, water resources, ecological resources, noise, transportation, public and occupational health, waste management, socioeconomics, and environmental justice) evaluated in the FEIS. She also discussed the three impact levels (i.e., small, moderate, and large) used for assessing the environmental impacts from the proposed enrichment facility and how these impact levels were determined. She described how impacts from pre-construction, construction, operations, and decommissioning were analyzed. She also stated that no large impacts were anticipated for the proposed facility. Results of the environmental review are addressed in Chapter 4 of the FEIS and mitigation measures are described in Chapters 4 and 5 of the FEIS.

Ms. Davis proceeded to discuss the resource areas with impacts that were greater than small. She stated that pre-construction and construction-related transportation impacts could be small to moderate and regional impacts would be small. Ecological impacts during pre-construction and construction are expected to be small to moderate but would be of limited duration (i.e., occurring primarily during pre-construction). She said that no Federally- or State-listed

threatened, endangered, or other special status species would be affected and that no environmentally sensitive areas would be affected by operations.
Ms. Davis noted that air quality impacts during pre-construction and construction are expected to be small to moderate primarily due to fugitive dust emissions. However, these emissions would be of limited duration. During operations, air quality impacts would be small.

During pre-construction and construction, Ms. Davis indicated that noise impacts could be moderate, but would be of limited duration and mitigation measures could be taken to reduce these impacts. During operations, noise impacts would be small.

Ms. Davis said that during preconstruction and construction, impacts on historic and cultural resources would be small to moderate and that GLE has procedures to address discoveries of artifacts, potentially historic sites, or human remains. GLE also agreed to a license condition to further reduce these impacts.

In conclusion, Ms. Davis stated that the NRC staff recommended that, based on the environmental review, a license be issued unless safety issues mandated otherwise.

Mr. Johnson then discussed the future milestones for the proposed project. He stated that a licensing board decision is expected in August 2012 and, if the board decision is positive, a license would be issued in September 2012. At this time, GLE expects to begin construction in 2014 and begin operations in 2015. Full production operations are scheduled in 2018.

After a brief summary of the presentations on the SER and FEIS, NRC staff took questions from members of the public who attended the meeting. Connie Majure-Rhett of the local Chamber of Commerce stated that General Electric has been a good corporate member of the community and its employees have been good local citizens who have contributed to the community.

Mr. Tom Clements of the Alliance for Nuclear Accountability asked if the NRC performed a nonproliferation assessment of the project. Mr. Clements also provide a position paper entitled, “Comments Submitted at NRC’s Meeting on Global Laser Enrichment Environmental Impact Statement (EIS), Wilmington, North Carolina” (Attachment 4) and asked that this document be entered into the meeting record. Mr. Johnson stated that, since the technology originally was developed in Australia, as part of the Agreement of Cooperation between the governments of the United States and Australia, a nonproliferation assessment was prepared by the U.S. Department of State and coordinated with DOE and NRC. This assessment concluded that the transfer of the laser enrichment technology into the U.S. supports U.S. nonproliferation objectives. Mr. Johnson then went on to explain that, contrary for some public accounts, the proposed GLE facility is not a small facility that would be difficult to detect. In fact, the footprint of the Operations Building, where enrichment operations would take place, has a footprint of 600,000 square feet and parts of the building are 160 feet high. Mr. Johnson also stated that there are several Federal agencies with nonproliferation responsibilities, including the U.S. Department of State, which as the overall Federal agency lead for nonproliferation policy, DOE, the U.S. Departments of Defense, Justice, and Commerce, and the intelligence community. Mr. Johnson said that NRC’s responsibilities include ensuring compliance with its regulations addressing the physical security of radioactive materials, materials control and accounting, protection of classified matter, and import and export control licensing. He also said that NRC inspects its regulated entities to ensure compliance with these requirements and that NRC coordinates with the other Federal agencies having responsibilities in the area of

nonproliferation to use their expertise and ensure that the nation's overall nuclear nonproliferation policy objectives are achieved.

Mr. Ronald Sparks asked about the decommissioning surety bond and who holds it. Mr. Johnson responded that a surety bond protects taxpayers in the event that GLE is unable to complete decommissioning. A surety bond has not yet been executed by GLE and a surety bond issuer but would be prior to GLE taking possession of licensed material. The surety bond language proposed by GLE in its License Application meets the requirements in NRC's regulations. He said that, in the event that GLE cannot complete the decommissioning of the facility, the surety bond would be payable to a Standby Trust from which the NRC would direct expenditures to complete decommissioning.

Mr. Rob Zapple asked about the radiation protection program and the potential for releases from the proposed facility. Mr. Johnson stated that the proposed radiation protection program included provisions to protect both the public and workers and met the requirements in 10 CFR Part 20. These requirements address exposures to the public and workers and also address air and liquid effluent releases to the environment. Mr. Johnson stated that there would be allowable air and liquid effluent releases to the environment, but these releases would be at controlled levels that would be a small fraction of the NRC regulatory limits.

As a follow-up, Mr. Cameron asked the staff to clarify how NRC establishes regulatory requirements. Mr. Johnson explained that NRC sets its standards based on international studies and standards, that its dose limits are consistent with international standards, and that NRC aims to keep releases and doses well below applicable standards.

Mr. Zapple then asked if there is any possibility of effect on the community as a result of releases from the proposed facility. Mr. Johnson replied that NRC regulations are designed to ensure that there will be no adverse effects.

Mr. Clements asserted that the depleted uranium tails currently stored at Paducah and Portsmouth represent an environmental and financial liability, and he asked what would happen to depleted uranium tails generated by GLE (and stored at the site). Mr. Smith responded by stating that, under the USEC Privatization Act, DOE is obligated to accept depleted uranium from licensed enrichment facilities for conversion into a more stable and environmentally-friendly waste product at DOE's new and operating deconversion facilities at Paducah and Portsmouth, prior to disposal as low-level radioactive waste. However, the producer must reimburse DOE its costs for this service. He stated that GLE proposed to use this DOE pathway for disposition of the tails and that GLE included the costs of DOE processing and disposing of the tails in its decommissioning funding plan cost estimate. The cost estimate was based on DOE–provided cost information.

Mr. Clements read excerpts of an April 23, 2012, comment memorandum from North Carolina Department of Environment and Natural Resources, Natural Heritage Program (NCNHP), noting NCNHP's concerns about potential impacts to two sensitive plant and animal species from an increase in the size of the facility after issuance of the DEIS. Ms. Davis noted that the DEIS was sent to the NCNHP through the North Carolina State Clearinghouse. Their response letter noted that no adverse impact was expected; however, Ms. Davis stated that the NRC staff will be reaching out to the Natural Heritage Program to discuss and resolve their concerns.

Mr. Clements asked about the potential for breaches in UF_6 cylinders and breaches from 50-caliber rounds. Mr. Johnson stated that UF_6 cylinders have a slight negative pressure when in storage and that, because of the chemical reactions that take place with UF_6 and air, small breaches tend to seal themselves and prevent further releases. Mr. Johnson said that tails cylinders have a thickness of 5/8 inch of carbon steel and would probably be penetrated by a 50-caliber round, but the chemical reactions would minimize any releases. He also stated that if 50-caliber rounds were being fired near the facility, GLE would be addressing this to protect the operational areas of its facility.

A member of the public asked about ground water impacts and a drinking water assessment, noting language in the FEIS that deals with trace radiological materials in stormwater and infiltration of proposed facility effluents into the Peedee sand aquifer. Mr. Johnson responded that ground water impacts from the facility are expected to be small and that any liquid effluent released would be processed and monitored before discharge to surface waters. Mr. Johnson said that prior operations at GE's fuel fabrication facility had produced ground water contamination that is currently being monitored and controlled. He said that the sources of this contamination have been removed and that any liquid effluent releases from the proposed enrichment plant would be small relative to the existing contamination. Further, the environmental review staff briefly discussed how groundwater contamination is controlled, how effluents will be monitored by different wells and treated before being released to meet regulatory requirements and the State's permitting role through the National Pollutant Discharge Elimination System (NPDES).

Mr. Zapple asked how NRC would ensure that ground water contamination will not be contaminated off-site and used by nearby residents. Mr. Johnson stated that GLE proposed an environmental monitoring program to detect ground water contamination. He said that this program is described in detail in the FEIS with maps of the ground water monitoring wells.

A member on the public asked if the public's exposure to radiation will be greater after construction and operation of the proposed facility than it is today. Mr. Johnson responded the difference would be expected to be slight and so low that it would be difficult to measure the difference.

Action Items

None

Attachments

1. Attendees list
2. SER presentation handout
3. FEIS presentation handout