

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
GE-HITACHI GLOBAL LASER ENRICHMENT	)	Docket No. 70-7016-ML
LLC	)	
	)	ASLBP No. 10-901-03-ML-BD01
(GLE Commercial Facility)	)	
	)	

NRC STAFF TESTIMONY RELATED TO TOPIC 4:  
TRACKING AND IMPLEMENTATION OF APPLICANT COMMITMENTS

**Q1:** Please state your name, occupation, employer, and professional qualifications.

**A1:** (JAD) My name is Jennifer A. Davis. I am a Senior Project Manager in the Environmental Review Branch, Environmental Protection and Performance Assessment Directorate, Division of Waste Management and Environmental Protection, Office of Federal and State Materials and Environmental Management Programs Office, U.S. Nuclear Regulatory Commission (NRC). A statement of my professional qualifications is attached.

**A1:** (DS) My name is Deborah Seymour. I am a Branch Chief in the NRC's Region II Office, in the Division of Construction Projects. A statement of my professional qualifications is attached.

**A1:** (JD) My name is José Díaz. I am a Senior Fuel Facility Project Inspector in the NRC's Region II Office in Atlanta, Georgia. A statement of my qualifications is attached.

**A1:** (TJ) My name is Timothy C. Johnson. I am a Senior Project Manager in the NRC's Office of Nuclear Material Safety and Safeguards (NMSS), Division of Fuel Cycle Safety and Safeguards. A statement of my professional qualifications is attached.

**Q2:** Please describe your responsibilities with regard to the NRC staff's review for the proposed GE-Hitachi Global Laser Enrichment LLC (GLE) Facility in Wilmington, North Carolina.

**A2:** (JAD) I am the Project Manager for the environmental review of GLE's application for the proposed GLE Facility. I was responsible for overseeing the preparation of NUREG-1938, "Environmental Impact Statement for the Proposed GE-Hitachi Global Laser Enrichment, LLC Facility in Wilmington, North Carolina," February 2012 (FEIS) (Ex. NRC003).

**A2:** (DS) I was not involved in the review of the license application for the proposed GLE Facility. However, if the Applicant is granted a license, the Division of Construction Projects (DCP) in Region II (RII) will oversee implementation of the construction inspections and the Operational Readiness Review (ORR) inspections that must be completed before the licensee can begin operations, as required by 10 CFR 40.41(g) and 10 CFR 70.32(k). DCP is responsible for the planning, performance, documentation, and enforcement, associated with the fuel facility construction inspection program, and will have a Branch Chief and a senior project inspector assigned to the project. These individuals will be responsible for tracking implementation of requirements and commitments, and oversight and tracking of the construction inspection program. I will be the Branch Chief overseeing these activities for the proposed GLE Facility. I was involved in these activities for the Louisiana Energy Services National Enrichment Facility, and am still involved in these activities for the Shaw AREVA MOX Services Mixed Oxide Fuel Fabrication Facility.

**A2:** (JD) I was not involved in the review of the application for the proposed GLE Facility. However, I am a Senior Fuel Facility Inspector within the division (in the NRC's Region II Office) that is responsible for performing the ORR inspection that, if the Applicant is granted a license, would need to be completed before the Applicant could begin operations, and for performing regular facility inspections that would occur during operation of the proposed GLE Facility.

**A2:** (TJ) As the Licensing Project Manager (PM) for the GLE project, I oversaw the licensing review of the proposed project and the preparation of the Safety Evaluation Report (SER), "Safety Evaluation Report for the General Electric-Hitachi Global Laser Enrichment LLC Laser-Based Uranium Enrichment Plant in Wilmington, North Carolina," NUREG-2120, February 2012 (Ex. NRC001), that documents the safety review prepared by NRC staff.

**Q3:** What is the purpose of your testimony?

**A3:** (JAD, DS, TJ, JD) The purpose of our testimony is to discuss the license conditions, mandatory mitigation measures, and commitments made by GLE that play a significant role in meeting the safety and environmental requirements applicable to the proposed GLE Facility; as well as the tracking and implementation of these license conditions, mandatory mitigation measures, and commitments.

**Q4:** Please define the term "commitment," and explain how a commitment differs from a license condition or a mandatory mitigation measure.

**A4:** (JAD, TJ) A "commitment" is a statement in a licensing document, such as the Environmental Report (ER), in which an applicant promises to take certain actions. For instance, an applicant might state in its ER that it will perform a specific mitigation measure. The NRC staff would consider such a statement to be a commitment by the applicant. Unlike regulations and orders, commitments in and of themselves are not legally binding. A commitment becomes legally binding only if the licensing document in which the commitment is stated is tied-down in the license (i.e., if the licensing document is incorporated into the license by reference). Once a licensing document is tied-down in a license, any commitments made in the licensing document become mandatory.

License conditions are supplemental provisions that are added to an NRC license based on one of three reasons: (1) if the provision is necessary to ensure that an applicant complies with the NRC's governing statute (i.e., the Atomic Energy Act of 1954, as amended (AEA)), NRC regulations, or other NRC requirements (e.g., other statutes applicable to the NRC or an

order issued by the NRC); (2) if the provision memorializes the NRC staff's approval of an exemption (i.e., a deviation from NRC regulations); or (3) if the applicant agrees to be bound by the provision. If a provision neither is necessary to ensure compliance with the requirements enumerated in the previous sentence, nor is memorializing the NRC staff's approval of an exemption, then the provision may become a license condition only if the applicant agrees to be bound by the provision. Once a provision is included in a license issued by the NRC, it becomes mandatory and binding on the licensee.

Mandatory mitigation measures are mitigation measures that are required to meet NRC regulations (i.e., for the proposed GLE Facility, 10 CFR Parts 20, 30, 40, and 70), or to comply with other regulations or statutes, or are required by other Federal, State, or local permitting agencies. Licensees are required to perform these mitigation measures due to a requirement found outside the NRC license; therefore, these mitigation measures are mandatory like license conditions, and are different from commitments, which are not in and of themselves mandatory.

#### Environmental License Conditions, Mandatory Mitigation Measures, and Commitments

**Q5:** Please identify the license condition that the NRC staff proposed in the FEIS to ensure that environmental requirements are met, and please summarize the potential deficiency that this license condition is intended to rectify.

**A5:** (JAD) The NRC staff proposed a license condition in Section 4.2.2.2 of the FEIS (on page 4-6, Ex. NRC003). This license condition is intended to ensure the NRC's compliance with Section 106 of the National Historic Preservation Act (NHPA). Per this proposed license condition, GLE is required to notify the NRC and consult with the North Carolina State Historic Preservation Office (SHPO) before it engages in any GLE developmental activity that was not previously evaluated by the NRC staff in the FEIS and would physically disrupt or disturb inventoried historic and cultural resources (i.e., historic properties) that have been designated eligible for listing on the National Register of Historic Places. This license condition would also be followed in the event of an unanticipated discovery of previously unknown cultural or

historical resources. The rationale behind this proposed license condition is that the NHPA requires Federal agencies to consider the effects of their undertakings on historic properties. If licensed, the proposed GLE Facility would be located in close proximity to land areas that contain inventoried cultural resources. Additionally, there is a potential for unanticipated discoveries to occur during any land disturbing activities. This proposed license condition formalizes a process for how GLE would address impacts from future activities conducted in areas not previously evaluated and would deal with unanticipated discoveries during the life of the proposed facility. This proposed license condition was developed in consultation with the NRC, GLE, and the North Carolina SHPO. GLE voluntarily agreed to add this condition to its license, if issued.

**Q6:** Please explain how the NRC staff will ensure that GLE will be in compliance with the license condition proposed in the FEIS.

**A6:** (JAD) This proposed license condition would be triggered only in two circumstances: (1) if there is an unanticipated discovery during facility operations or maintenance activities; or (2) if the Applicant seeks to engage in any GLE developmental activity that was not previously assessed by the NRC staff in the FEIS and would physically disrupt or disturb an inventoried historic property that has been designated eligible for listing on the National Register of Historic Places. Once the proposed license condition is triggered, GLE would notify the NRC and consult with the North Carolina SHPO to develop mitigation measures to resolve any effects. GLE is also required by the proposed license condition to report on the status of any activities that would affect cultural resources in its Annual Environmental Monitoring Report. There would be no formal audit or inspection activity associated with this license condition. The NRC staff would rely on GLE to notify the NRC when this license condition is triggered or when GLE contacts the North Carolina SHPO to initiate consultation.

**Q7:** Are there any other environmental license conditions that would be included in any future license, if issued, for the proposed GLE Facility, and what is the basis for these license conditions?

**A7:** (JAD) If the Applicant is issued an NRC license for the proposed GLE Facility, the license would also include a license condition that would require the Applicant to comply with the conditions contained in the Applicant's 401 Water Quality Certification (Ex. NRC040) (see 33 U.S.C. § 1341(d)). This license condition is required by Section 401(d) of the Clean Water Act (CWA) (33 U.S.C. § 1341(d)), which states that any certification provided under Section 401 of the CWA "shall become a condition on any Federal license or permit subject to the provisions of this section." An applicant for a Federal license or permit must obtain a certification under Section 401 of the CWA if the Federal license or permit would authorize activities that may result in a discharge into navigable waters. GLE received its 401 Water Quality Certification from the North Carolina Department of Environment and Natural Resources (NCDENR), Division of Water Quality (DWQ), in May 2012 (Ex. NRC040). This 401 Water Quality Certification identifies specific measures that GLE shall employ to avoid impacts to waterways and wetlands to the extent practicable.

**Q8:** Please explain how the NRC staff will ensure that GLE will be in compliance with this license condition (discussed in response to the previous question).

**A8:** (JAD) As noted in the response to the previous question, if a license is issued to GLE, the license would include a condition that would require GLE to comply with the conditions contained in its 401 Water Quality Certification (Ex. NRC040) (see 33 U.S.C. § 1341(d)). The NCDENR DWQ is the State agency responsible for issuing water quality certifications under Section 401 of the CWA. When the State issues a 401 Water Quality Certification, the State certifies that a given project will not degrade Waters of the State and will not violate State water quality standards.

The NCDENR DWQ determined that the impacts associated with the proposed GLE Facility would be covered by General Water Quality Certification No. 3890 – Minor Discharges (which is part of the 401 Water Quality Certification, Ex. NRC040). The 401 Water Quality Certification provides the NCDENR DWQ director or staff with the ability to inspect implementation of the Applicant's 401 Water Quality Certification, as needed. As stated within General Water Quality Certification No. 3890 (Ex. NRC040), "[t]he conditions in effect on the date of issuance of Certification for a specific project shall remain in effect for the life of the project, regardless of the expiration date of this Certification. Non-compliance with or violation of the conditions herein set forth by a specific project may result in revocation of the General Certification for the project and may also result in criminal and/or civil penalties."

Compliance with this 401 Water Quality Certification (Ex. NRC040) will rely on self-monitoring by GLE, as well as on complaints reported by other persons to the NCDENR DWQ regarding GLE's compliance with its 401 Water Quality Certification. GLE is required to notify the NCDENR DWQ if GLE identifies any violations of its 401 Water Quality Certification. GLE is required to notify the NRC concurrently with the NCDENR DWQ per 10 CFR Part 70, Appendix A, "Reportable Safety Events," if any event or situation related to the health and safety of the public or onsite personnel, or to the protection of the environment, results in a notification to the NCDENR DWQ. Any State-identified violation or non-compliance issue with regard to GLE's 401 Water Quality Certification (Ex. NRC040) would also be a violation of the NRC license (if an NRC license were issued for the proposed GLE Facility), and would be evaluated by the NRC staff for appropriate action in accordance with the NRC's enforcement program.

**Q9:** Please discuss the mandatory mitigation measures associated with the proposed GLE Facility.

**A9:** (JAD) Mandatory mitigation measures associated with the proposed GLE Facility include those mitigation measures that are required to meet NRC regulations in 10 CFR Parts

20, 30, 40, and 70, or to comply with other regulations or statutes, and that are required by other Federal, State, or local permitting agencies.

The rest of this response describes the mandatory mitigation measures associated with the proposed GLE Facility. This discussion might not be inclusive of all applicable mandatory mitigation measures because some construction and operating permits (that have not yet been issued by other permitting agencies) could require the Applicant to follow best management practices. At this point, some of the voluntary mitigation measures listed by GLE could become mandatory, but that cannot be ascertained until GLE receives those additional permits.

In the area of public and occupational health, mitigation measures proposed by GLE that are based on GLE's Site Nuclear Safety Program and Industrial Program to meet the applicable State, NRC, and Occupational Safety and Health Administration (OSHA) requirements are considered mandatory. Additionally, any design features that can have a mitigating effect on the releases to the environment during normal operations and accidents and for which GLE takes credit are considered mandatory. The following discussion identifies which of GLE's proposed mitigation measures (from Table 5-1 of the FEIS, Ex. NRC003), separated by resource area, would be considered mandatory, not voluntary; if a mitigation measure from Table 5-1 is not discussed in response to this question, then it is not considered to be mandatory.

#### *Public and Occupational Health*

The following mitigation measures proposed by GLE (based on GLE's Site Nuclear Safety Program and Industrial Program to meet the applicable State, NRC, and OSHA requirements) are considered mandatory:

- Comply with all applicable State, NRC, and OSHA regulations concerning worker health and safety, as well as the existing Wilmington Site Nuclear Safety Program and the Industrial Safety Program.



- Comply with the Site Radiation Protection Program, the Spill Prevention Control and Countermeasures (SPCC) plan, and the GLE Environmental, Health, and Safety Program.
- Conduct routine radiological surveys to characterize and minimize potential radiological exposure.
- Monitor all radiation workers via the use of dosimeters and area air sampling to ensure that radiological doses remain within regulatory limits and As Low As Reasonably Achievable (ALARA).
- Conduct operations activities involving hazardous respirable effluents with ventilation control and/or respiratory protection, as required.
- Use personal protective equipment based on the nature of the work and chemical and/or radiological hazards present.
- Perform environmental monitoring and sampling to ensure compliance with regulatory discharge limits.

The following mitigation measures proposed by GLE as part of the facility design are considered mandatory:

- Install a building ventilation system to maintain the majority of the interior of the process building under sub-atmospheric pressure.
- Install alarms in the Emergency Control Center to detect, alarm, and/or activate the automatic safe shutdown of process equipment in the event of operational problems.
- Install radiation monitors in effluent stacks to detect, alarm, and activate the automatic safe shutdown of process equipment, should contaminants be detected in the system exhaust.
- Vent exhaust gases from the emission control system to the atmosphere through a single rooftop stack.

- Route treated process wastewater effluents to the existing final process lagoon facility for additional treatment.

#### *Waste Management*

For waste management, the following mitigation measures proposed by GLE (including those intended to minimize waste in accordance with 10 CFR 20.146) would be considered mandatory:

- Minimize the quantities of waste generated by the proposed facility by implementing the Waste Minimization Plan (minimization of waste per 10 CFR 20.1406).
- Perform an integrated safety analysis (ISA) for each onsite waste storage area to identify and prevent accidental releases to the environment.
- Monitor and inspect onsite liquid waste storage tanks and containers on a periodic schedule to detect leaks or releases to the environment due to equipment malfunctions so that actions identified in the SPCC plan or other appropriate corrective action can be taken promptly.
- Pre-treat radioactive liquid wastewaters in a treatment system planned for the proposed facility before the wastewater effluent is pumped to the existing NPDES permitted final process lagoon facility for further treatment.
- Ship each waste generated by the proposed facility that requires offsite storage, treatment, or disposal to a licensed facility (as appropriate for the waste type) in compliance with U.S. Environmental Protection Agency (EPA) and NRC requirements.
- Minimize onsite storage volumes and times and ship waste destined for offsite treatment and disposal facilities as soon as practicable (minimization of waste per 10 CFR 20.1406).

- Conduct onsite treatment of process and sanitary wastewaters to National Pollutant Discharge Elimination System (NPDES) permit limits before discharge to receiving waters.
- Avoid and minimize potential hazardous and radiological waste impacts from the UF<sub>6</sub> storage pads by implementing design elements and safety procedures during operation, including:
  - Use of a storage array that permits easy visual inspection (stacked no more than two cylinders high);
  - Segregation of storage pad areas from the rest of the enrichment facility by barriers (e.g., vehicle guardrails);
  - Inspection of cylinders for external contamination (i.e., a “wipe test”) prior to placing on the storage pads or transporting them offsite;
  - Ensuring that UF<sub>6</sub> cylinders are not equipped with defective valves;
  - Allowing only designated vehicles with a limited amount of fuel in the storage pad area;
  - Allowing only trained and qualified personnel to operate vehicles in the storage pad area; and
  - Monitoring the holding pond that collects stormwater from the cylinder pads.
- Inspect cylinders of UF<sub>6</sub> initially prior to placing a filled cylinder on a storage pad and, thereafter, inspect periodically for damage or surface coating defects. Inspection criteria would include ensuring that:
  - Lifting points are free from distortion and cracking;
  - Cylinder skirts and stiffener rings are free from distortion and cracking;
  - Cylinder surfaces are free from bulges, dents, gouges, cracks, or significant corrosion;
  - Cylinder valves are fitted with the correct protector and cap;

- Cylinder valves are straight and not distorted, two to six threads are visible, and the square head of the valve stem is undamaged; and
  - Cylinder plugs are undamaged and not leaking.
- If inspections of a cylinder reveal significant deterioration or other conditions that may affect its safe use, transfer the contents of the cylinder to another cylinder and discard the defective cylinder. Investigate the cause of any significant deterioration, and if necessary, perform additional inspection of cylinders (minimization of waste per 10 CFR 20.1406).
- Conduct continuous or periodic monitoring of waste management processes and storage facilities for the detection of non-intentional releases to the environment, so that corrective actions would be taken to minimize adverse impacts on the environment. For example, directing stormwater runoff from the UF6 storage pads to a holding pond, where it would be monitored to ensure that unexpected radioactive material releases to the wet detention basin did not occur (minimization of waste per 10 CFR 20.1406).

#### *Geology and Soils*

For geology and soils, most of GLE's proposed mitigation measures (identified in Table 5-1 of the FEIS, Ex. NRC003) are not mandatory. The following mitigation measures match the objectives of the New Hanover County Erosion and Sedimentation Control Ordinance (New Hanover County 2007), but are not necessarily mandatory:

- Minimize the construction footprint to the extent possible.
- Engineer design plans that minimize soil disturbance during construction activities.

The following mitigation measure is a requirement of the New Hanover County Erosion and Sedimentation Control Ordinance (New Hanover County 2007):

- Stabilize drainage culverts and ditches by lining surface with rock aggregate/rip-rap to reduce flow velocity and prohibit scouring.

### *Surface Water*

For surface water resources, most of GLE's proposed mitigation measures (identified in Table 5-1, Ex. NRC003) are not mandatory. The following mitigation measure is an acknowledgement of Best Management Practices (BMPs), which are not necessarily mandatory:

- Follow proper construction BMPs as specified by the New Hanover County Erosion and Sedimentation Control Ordinance (New Hanover County 2007).

For surface water resources, GLE would be required to adhere to the conditions set forth in its 401 Water Quality Certification (Ex. NRC040) and any other Federal, State, and local permits. The New Hanover County Erosion and Sedimentation Control Ordinance (New Hanover County 2007) requires submittal of an erosion and sedimentation control plan for land-disturbing activities. This plan would be reviewed by the county for approval; a revised plan may be required. It is possible that many of the measures listed in Table 5-1 (Ex. NRC003) for geology and soils and for surface water—although not explicitly stated in the ordinance—may be required to be included in the plan in order to get county approval.

The following mitigation measures are requirements of the New Hanover County Flood Damage Prevention Ordinance (New Hanover County 2006) and the Wilmington Site NPDES permit (and any future revisions to the NPDES permit) (see Exs. NRC041, NRC042, NRC043), respectively:

- Design and construct the upgrade of the crossing over Unnamed Tributary #1 following procedures required by the New Hanover County Flood Damage Prevention Ordinance (New Hanover County 2006).
- Comply with all NPDES stormwater and wastewater permit requirements.

The following mitigation measure is a set of BMPs, which could become (after additional permits are issued to GLE), but are not necessarily, mandatory:

- Route stormwater from the proposed facility to a new stormwater wet detention basin, designed in accordance with the North Carolina NCDENR Stormwater Best Management Practices Manual (2007).

### *Ecological Resources*

One of the proposed mitigation measures for ecological resources included in Table 5-1 (Ex. NRC003) is that GLE will “[c]onsider the recommendations of appropriate State and Federal agencies, including the U.S. Fish and Wildlife Service (USFWS) and the North Carolina Department of Environment and Natural Resources.” Some of these recommendations may be incorporated into the permits issued by Federal, State, and local agencies, in which case these recommendations would become mandatory. Executive Order 11990, “Protection of Wetlands,” requires Federal agencies to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial uses of wetlands. Unavoidable impacts on wetlands within the jurisdiction of the U.S. Army Corps of Engineers would require a CWA Section 404 Permit, which was granted to GLE in May 2012. The conditions contained within the Section 404 permit were incorporated into GLE’s CWA Section 401 Water Quality Certification issued by NCDENR DWQ (Ex. NRC040). As stated previously, GLE received its 401 Water Quality Certification (Ex. NRC040) in May 2012. All conditions stated in GLE’s 401 Water Quality Certification are considered mandatory.

Additional mitigation measures that are considered mandatory, but are not listed in Table 5-1, include adherence to applicable statutory and regulatory requirements (see FEIS Section 1.5, Ex. NRC003). These requirements include, but are not limited to, the Endangered Species Act and Executive Order 11990 (Protection of Wetlands). Also, the proposed project would be subject to the Migratory Bird Treaty Act regulated by the USFWS. This Act makes it unlawful to pursue, hunt, take, capture, kill, offer for sale, purchase, or offer for shipment any bird, egg, or nest protected under several migratory bird treaties, except as permitted by the regulations promulgated under this Act. The applicability of this Act to GLE would primarily relate to the

possible destruction of nests (during the breeding season) from GLE's preconstruction and construction activities. The Applicant would need to consult with the USFWS regarding compliance with the Act.

#### *Noise*

For noise, the mitigation measures listed in Table 5-1 (Ex. NRC003) may be included in construction and operating permits obtained at the local level, but if not, would not be considered mandatory.

#### *Transportation*

For transportation, the following mitigation measures are considered mandatory, as these measures would be required by the North Carolina Department of Transportation:

- Add roadway improvements (e.g., a turn lane) to NC 133 as required by the North Carolina Department of Transportation (NCDOT) for issuance of a driveway permit for connections of the new entrance.
- Work with NCDOT to evaluate driveway and roadway improvement options to minimize impacts.

**Q10:** Please describe the NRC staff's role in ensuring that these mandatory mitigation measures will be implemented and tracked.

**A10:** (JAD) The NRC staff will have an ongoing role in inspecting and monitoring the implementation of mitigation measures that are required to meet 10 CFR Parts 20, 30, 40, and 70. NRC Region II staff is responsible for tracking implementation of these mandatory mitigation measures (that fall within the NRC's regulatory authority), as well as for oversight and tracking of the construction and facility operations inspection program.

**Q11:** Are there other Federal, State, or local government agencies that have the authority to ensure that the other mandatory mitigation measures (outside of the NRC's regulatory authority) will be implemented and tracked?

**A11:** (JAD) Mandatory mitigation measures that are covered by permits issued by other Federal, State, and local permitting agencies would be tracked by the agency that issued the particular permit. Section 1.5 of the FEIS (Ex. NRC003) provides a summary assessment of the major environmental requirements, agreements, Executive Orders, and permits relevant to the construction, operation, and decommissioning of the proposed GLE Facility. GLE is responsible for complying with all applicable requirements imposed or regulated by Federal, State, and local permitting agencies. As previously discussed, these requirements include, but are not limited to, the Endangered Species Act, Migratory Bird Treaty Act, Clean Air Act of 1970, CWA (amending the Federal Water Pollution Control Act of 1948), Resource Conservation and Recovery Act of 1976, Safe Drinking Water Act of 1974, Noise Control Act of 1972, and other applicable State of North Carolina requirements listed in Table 1-2 of the FEIS (Ex. NRC003). The agencies responsible for these statutes would be responsible for ensuring that any mitigation measures required by those statutes are implemented and tracked.

**Q12:** Please describe the important commitments (including voluntary mitigation measures) that are contained in the Applicant's Environmental Report.

**A12:** (JAD) The NRC staff considered all of GLE's proposed mitigation measures (listed in Chapter 4 and in Table 5-1 of the FEIS, Ex. NRC003) that are not mandatory (as described in response to Question 9 in this pre-filed testimony) to be commitments. As discussed in response to Question 15 in this pre-filed testimony, the implementation of the mandatory mitigation measures by GLE would be protective of public health and safety and the environment. If GLE implemented some of the voluntary mitigation measures, impacts in some resource areas could be lower, but the NRC's overall impact conclusions in the FEIS would not change. As a result, none of the voluntary mitigation measures would be considered to be important commitments.

**Q13:** Please discuss the NRC staff's role in ensuring that these commitments from the Environmental Report (i.e., the voluntary mitigation measures) will be implemented and tracked.



**A13:** (JAD) As discussed in response to Question 3 in this pre-filed testimony, commitments are not binding or mandatory unless the licensing document that contains the commitment becomes incorporated in an NRC license by tie-down references. The Applicant's ER (Ex. GLE006) would not be incorporated in an NRC license issued to GLE because, as explained in response to Question 4, the NRC can impose a license condition only if the potential license condition is necessary to ensure that an applicant complies with the NRC's governing statute, NRC regulations, or other NRC requirements; if the condition memorializes the NRC staff's approval of an exemption; or if the applicant agrees to be bound by the provision. Here, the NRC staff does not have authority to require the Applicant to comply with all of its statements in the ER (because many of the statements in the ER do not involve the AEA, NRC regulations, or other NRC requirements), and the Applicant did not agree to be bound by the entire ER (Ex. GLE006), and thus the NRC staff does not intend to tie-down the entire ER in any future NRC license issued to GLE. The commitments made by GLE in its ER in the radiological area fall within the NRC's jurisdiction and were also included in the radiation protection and environmental protection chapters in the GLE License Application (LA, Ex. GLE006); these AEA-related commitments would thus be included in the license condition that ties down the LA and would become mandatory and enforceable by the NRC. Consequently, the NRC staff would not ensure that the commitments from the ER (i.e., the voluntary mitigation measures) are tracked or implemented.

**Q14:** Are there other Federal, State, or local government agencies that have the authority to ensure that these commitments from the Environmental Report (i.e., the voluntary mitigation measures) will be implemented and tracked?

**A14:** (JAD) As stated in response to Question 11 in this pre-filed testimony, mandatory mitigation measures that are covered by permits issued by other Federal, State, and local permitting agencies would be monitored and tracked by the agency that issued the particular permit. Some of the commitments in the ER (i.e., the voluntary mitigation measures) could be

within the authority of other Federal, State, and local agencies. However, as stated in response to Question 9, at this point, it cannot be ascertained if these voluntary mitigation measures will become conditions of the permits that have not yet been issued by other agencies. If these commitments are within the authority of other agencies or become conditions of the permits issued by other agencies, then these commitments would be tracked and implemented by those agencies.

**Q15:** Would the environmental impacts discussed in the FEIS change if GLE does not implement these commitments from the Environmental Report (i.e., the voluntary mitigation measures)?

**A15:** (JAD) As discussed in the NRC staff's response to FEIS Question 37 of the Board's initial questions (Ex. NRC009), as a licensing agency, the NRC staff evaluates the LA for compliance with the NRC's regulations associated with uranium enrichment facilities. In addition, the NRC staff relies on other permitting agencies that require an applicant to meet applicable permitting requirements in evaluating environmental impacts. The NRC staff finds that compliance with the NRC's regulatory requirements and other permitting agencies' requirements is sufficient to be protective of human health and the environment. If GLE implements only mitigation measures mandated by applicable regulations, laws, and permits, the impacts in some resource areas could be incrementally higher than estimated in the FEIS, but the NRC staff's overall impact conclusions in the FEIS would not change.

#### Safety-Related License Conditions and Commitments

**Q16:** Please identify the license conditions that the NRC staff proposed in the SER to ensure that safety requirements are met, and please summarize the purpose of each license condition.

**A16:** (TJ) The following table identifies each license condition that the NRC staff proposes to include in the license for the proposed GLE Facility (except for the environmental license conditions discussed in response to Questions 5 and 7 in this pre-filed testimony), along

with a brief statement of each condition's purpose. For the standard license conditions, the full text is provided in the table, except for the tie-down condition (item 2 in the table), for which the full text is provided in the response to Question 17. For license conditions specific to the proposed GLE Facility, a reference to the SER section containing the full text of the license condition is provided.

	<b>License Condition</b>	<b>Reference</b>	<b>Purpose</b>
1	Authorized place of use: General Electric-Hitachi Global Laser Enrichment Commercial Facility, located 6 miles north of Wilmington, North Carolina on Highway 133, Castle Hayne Road, in New Hanover County, North Carolina.	N/A	This is a standard license condition identifying the place of use.
2	Tie-down condition (text provided in response to Question 17)	N/A	This is a standard tie-down license condition that makes commitments stated in listed licensing documents mandatory and enforceable.
3	This license will expire 40 years after the date of license issuance.	N/A	This is a standard license condition stating the term of the license.
4	Introduction of UF <sub>6</sub> into any module of the General Electric-Hitachi Global Laser Enrichment Commercial Facility shall not occur until the Commission completes a construction inspection in accordance with 10 CFR 40.41(g) and 70.32(k) and an operational readiness and management measures verification review to verify that management measures that ensure compliance with the performance requirements of 10 CFR 70.61 have been implemented and confirms that the facility has been constructed and will be	N/A	This is a standard enrichment facility license condition requiring advance notice of planned operations so that the construction inspection required under 10 CFR 40.41(g) and 70.32(k) can be performed

	License Condition	Reference	Purpose
	operated safely and in accordance with the requirements of the license. General Electric-Hitachi Global Laser Enrichment, LLC, shall provide the Commission with 60 days advance notice of its plan to introduce UF <sub>6</sub> in any module of the General Electric-Hitachi Global Laser Enrichment Commercial Facility.		
5	Limitation on tails cylinder storage	SER Section 1.1.3	This license condition will limit the number of tails cylinders stored onsite to the capacity of the tails storage pad.
6	Incremental funding availability	SER Section 1.2.3.3.2	Because GLE did not provide complete funding commitments for the proposed facility, this license condition will ensure that adequate funding will be available before construction of each phase and that financial qualification requirements are met.
7	Proof of liability insurance	SER Section 1.2.3.4	This license condition will require GLE to provide proof of full liability insurance of \$200 million prior to obtaining licensed material, and allows GLE to propose (subject to NRC review and approval) less than \$200 million of liability insurance with justification.
8	Notice prior to production greater than 5 weight percent to support product shipments.	SER Section 1.2.3.5	Current proposed equipment and operations are limited to 5 weight percent <sup>235</sup> U enrichment. This license condition will ensure that uranium enriched up to 8 weight percent can be transported safely in approved product containers.
9	Release for unrestricted use	SER Sections 1.2.3.7.1, 4.3.7	This license condition authorizes use of NRC guidance document for decontamination and surveys prior to release of materials, equipment, and facilities for unrestricted use.
10	License Application change process	SER Section 1.2.3.7.2	This license condition authorizes a process for making changes to the License Application without prior NRC approval in accordance with no decrease in

	<b>License Condition</b>	<b>Reference</b>	<b>Purpose</b>
			effectiveness standard.
11	Exemption from use of 10 CFR Part 20, Appendix B dose coefficients	SER Section 1.2.3.7.3	This license condition grants an exemption allowing GLE to use International Commission on Radiological Protection (ICRP) Report No. 68 as the basis for dose determinations.
12	Exemption to the labeling requirements in 10 CFR 20.1904	SER Section 1.2.3.7.4	This license condition grants an exemption allowing GLE to use an alternative to the labeling requirements in 10 CFR Part 20 for administrative simplicity.
13	Decommissioning financial assurance	SER Sections 1.2.3.7.5, 10.3.2.2	This license condition grants an exemption to the decommissioning financial assurance requirements of 10 CFR 70.25(e) and 40.36(d) to allow incremental funding for decommissioning. The license condition contains GLE's commitments for updating its Decommissioning Funding Plan over time, including requirements for the timing and funding amounts for initial and subsequent financial instruments and the timing and content of updated cost estimates.
14	Exemption from 10 CFR 21.3 definitions	SER Section 1.2.3.7.6	This license condition grants an exemption to 10 CFR 21.3 definitions of "basic component," "commercial grade item," "critical characteristics," "dedication," and "dedicating entity" to meet the same intent provided in 10 CFR Part 50 regulations for nuclear power plants.
15	Exemption to the requirements in 10 CFR 70.24	SER Section 1.2.3.7.7	This license condition grants an exemption to criticality accident alarm system (CAAS) requirements in areas unlikely to pose a criticality risk.
16	Exemption to the requirements in 10 CFR 70.65(b)(4)	SER Section 1.2.3.7.8	This license condition grants an exemption to the requirement to provide detailed design information for the CAAS in the Integrated Safety Analysis (ISA) Summary because the detailed facility design is not available at this time. GLE must provide design information for the CAAS to the NRC for review and approval, and include the information in the ISA Summary, before obtaining licensed material.

	License Condition	Reference	Purpose
17	Exemption to material control and accounting (MC&A) requirements in 10 CFR 74.33(c)(5)	SER Section 1.2.3.7.9	This license condition grants an exemption to MC&A requirements to establish, document and maintain a material control and accountability (MC&A) detection program. MC&A detection program information is not available at this time, but would be provided for NRC review and approval before the receipt of licensed material.
18	Changes to nuclear criticality safety validation report	SER Section 5.3.5.1	This license condition requires submittal to the NRC for approval of changes to the nuclear criticality safety validation report that would result in a decrease of effectiveness of the validation basis.
19	Notice prior to product withdrawal exceeding 5 weight percent to ensure nuclear criticality safety.	SER Section 5.3.5.1	This license condition requires GLE to provide additional nuclear criticality safety basis to the NRC for approval to support production at assays greater than 5 weight percent <sup>235</sup> U enrichment.
20	Restriction on changes to Section 5.4 of the License Application.	SER Section 5.3.5.1	This license condition requires GLE to provide to the NRC for approval changes to criticality-based analyses that result in less conservative evaluations.
21	Fundamental Nuclear Material Control Plan	SER Section 12.2 (Public Version); SER Section 12.4 (Non-Public Version)	This license condition is required by 10 CFR 70.32(c)(1).
22	Use of IROFS using digital equipment	SER Section 16.2 (Public Version); SER Section 16.3.2.3.3 (Non-Public Version)	This license condition requires GLE to obtain NRC approval prior to making changes in items relied on for safety (IROFS) from analog to digital equipment.

**Q17:** Please describe the tie-down license condition proposed for the GLE facility and its role in ensuring that the licensee's safety commitments will be implemented.

**A17:** (TJ) For fuel cycle facilities, the NRC typically includes a "tie-down" license condition in the license. The purpose of this condition is to list all of the various licensing

documents (e.g., LA, decommissioning funding plan, and emergency plan), along with any subsequent revisions, with which the licensee shall comply. Through this tie-down condition, the applicant's statements and commitments that support the NRC staff's safety and security reviews are incorporated into the license and thereby become enforceable. As inspectors prepare for inspections, they will refer to the license, specifically the "tie down" condition, for the latest version of licensee documents. As they review these documents, they will identify licensee commitments in which to inspect. As they perform their inspections, they will evaluate whether and how well the licensee implemented these commitments. The proposed text of the tie-down license condition for the proposed GLE Facility is provided below:

The licensee shall conduct authorized activities at the General Electric-Hitachi Global Laser Enrichment Commercial Facility in accordance with the statements, representations, and conditions, or as revised in accordance with 10 CFR 40.35(f), 10 CFR 51.22, 10 CFR 70.32, or 10 CFR 95.19 in:

- a. "GE-Hitachi Global Laser Enrichment LLC Commercial Facility License Application," dated June 26, 2009; March 23, 2010; June 25, 2010; December 16, 2010; March 29, 2011; August 1, 2011; August 12, 2011; October 14, 2011; and November 11, 2011;
- b. "Fundamental Nuclear Material Control Plan for the GE-Hitachi Global Laser Enrichment LLC Commercial Facility," dated June 26, 2009; March 24, 2010; and June 25, 2010;
- c. "Radiological Contingency and Emergency Plan (RC&EP) for Global Nuclear Fuel – Americas, LLC and GE-Hitachi Global Laser Enrichment, LLC at Wilmington, NC," dated June 26, 2009; March 24, 2010; June 25, 2010; December 16, 2010; and January 17, 2011;
- d. "Standard Practice Procedures Plan (SPPP) for the Protection of Classified Matter for the GE-Hitachi Global Laser Enrichment LLC Commercial Facility," SPPP-03; dated September 4, 2009; and March 24, 2010;
- e. "Standard Practice Procedures Plan for the Protection of Classified Matter Global Laser Enrichment Wilmington, NC Facility," GLEP-0009-R; dated June 24, 2009; August 6, 2009; November 16, 2009; November 24, 2009; April 1, 2010; April 29, 2010; July 29, 2010; December 20, 2010; August 29, 2011; October 5, 2011; October 10, 2011; and November 4, 2011;

- f. "Quality Assurance Program Description for the GE-Hitachi Global Laser Enrichment LLC Commercial Facility," dated June 26, 2009; March 23, 2010; January 6, 2011; February 8, 2011; April 8, 2011; August 12, 2011; and September 21, 2011;
- g. "GEMER Monte Carlo Code Validation Report," dated September 4, 2009; and January 13, 2010;
- h. "Physical Security Plan (PSP) for the GE-Hitachi Global Laser Enrichment LLC Commercial Facility," dated June 26, 2009; and March 24, 2010;
- i. "Decommissioning Funding Plan for the GE-Hitachi Global Laser Enrichment LLC Commercial Facility," dated June 26, 2009; March 23, 2010; March 24, 2010; June 25, 2010; and December 16, 2010;
- j. "Nuclear Material Transportation Security Plan (NMTSP) for the GE-Hitachi Global Laser Enrichment LLC Commercial Facility," June 26, 2009; and March 24, 2010;
- k. "Human Factors Engineering Program Plan," March 24, 2010; and February 8, 2011;
- l. "Program Cyber Security Plan for the MSF/OREF," dated June 20, 2011;
- m. "Program Cyber Security Plan - GLE Engineering and Industrial Controls," dated December 6, 2011.

As noted in response to Question 13 in this pre-filed testimony, for environmental safety, commitments made by GLE in its ER (Ex. GLE006) in the radiological area fall within NRC's jurisdiction and were included in the radiation protection and environmental protection chapters in the GLE LA (Ex. GLE004) and, therefore, would be included in the license condition that ties down the LA and would become mandatory and enforceable by the NRC.

**Q18:** Please explain how the NRC staff will ensure that GLE will be in compliance with the license conditions proposed in the SER.

**A18:** (TJ) The NRC will ensure compliance with the license conditions, as well as other regulatory requirements, through its inspection program. If any non-compliance is discovered, it will be referred for enforcement action as appropriate.



**Q19:** How will the NRC staff ensure that the proposed GLE facility is constructed in accordance with the commitments contained in the LA?

**A19:** (DS) The licensee has the primary responsibility for constructing the facility as designed and licensed. However, Section 193(c) of the AEA provides that, “prior to commencement of operation of a uranium enrichment facility licensed hereunder, the Commission shall verify through inspection that the facility has been constructed in accordance with the requirements of the license for construction and operation.” This requirement is codified in the NRC’s regulations under 10 CFR 40.41(g) and 70.32(k) and applies to each construction phase and each cascade planned to be placed into operation. The NRC staff refers to these required inspections as construction and ORR inspections.

The NRC staff will conduct construction inspections, in addition to ORR inspections, to confirm that GLE has constructed the GLE facility in accordance with applicable commitments. Where appropriate, the construction and ORR inspections may be combined. The ORR inspections will address the operational programs, or significant changes to those operational programs, for each of the applicable phases.

**Q20:** Who is responsible for implementing the GLE construction and ORR inspection programs?

**A20:** (DS) DCP staff in Region II is responsible for overseeing and implementing the GLE construction and ORR inspection programs. A Senior Project Inspector, in conjunction with a senior project manager from NMSS, will be assigned to the GLE facility to oversee and coordinate the construction and ORR inspection programs. Regional construction inspectors along with other headquarters inspectors will perform inspections at the GLE facility to sample GLE’s compliance with applicable commitments. The inspectors are required to be familiar with the licensee’s LA and other license application commitments to develop their inspection plans to verify implementation of the licensee’s commitments through routine construction and ORR inspections. The inspectors will also be familiar with GLE’s ISA Summary (Ex. GLE010). The

Senior Project Inspector uses a customized computer program to track inspection completion. Inspection results are assessed periodically to determine the licensee's level of compliance in meeting their commitments.

**Q21:** During the construction and ORR inspections, how will the NRC inspectors verify that GLE's safety commitments are implemented?

**A21:** (DS) The Senior Project Inspector, in coordination with NMSS and the regional inspectors responsible for inspecting a specific technical area, is responsible for ensuring that an appropriate sample of these commitments and requirements are adequately incorporated into the construction and ORR inspections. The inspection sample is based upon the complexity of the IROFS and the risk methodology outlined in 10 CFR 70.61, "Performance Requirements." NMSS ranks the IROFS according to high, intermediate, and low accident and criticality consequences.

The inspection program will be outlined in an inspection manual chapter (IMC) that describes fuel facility construction and pre-operational readiness review inspection programs. This IMC is expected to be issued in advance of the onset of construction at the GLE facility. Prior to the NRC authorizing operation of the facility, ORR inspections will be conducted to verify safety programs and operational readiness. Typical areas covered by ORR inspections include radiation safety, environmental and waste, transportation, nuclear criticality, operations, fire protection, emergency preparedness, and material control and accountability. Other program offices that participate in the construction and ORR inspections include the Office of Nuclear Security and Incident Response (NSIR), in conjunction with Region II physical security inspectors. These inspectors are responsible for verifying that the information security and physical security commitments are met. The ORR inspections evaluate licensee construction of the facility and implementation of the safety and security programs in accordance with the regulations, licensee's LA, and other license application commitments.

**Q22:** How does the NRC inspection staff know when to inspect construction activities?

**A22:** (DS) The Senior Project Inspector for the GLE facility will routinely communicate with GLE to discuss the construction inspection schedule. Region II typically obtains licensee construction schedules in Primavera scheduling software (commonly used by many NRC licensees). The Primavera schedule is integrated into the NRC's construction inspection schedule. Currently, weekly scheduling meetings are held in Region II with key NRC staff to discuss and allocate inspection resources for inspections for each facility under construction. The goal is to inspect early in the process, identify issues early in the process, and verify implementation of appropriate corrective actions early in the process. The Region II construction inspection program is based on ongoing construction inspections while construction is occurring.

**Q23:** After operations begin, how will the NRC ensure that the proposed GLE facility is operated in accordance with the commitments in the LA?

**A23:** (JD) The NRC staff will conduct routine inspections of various aspects of facility operations based on the core inspection program to ensure compliance with regulatory requirements and the license application. These inspections are scheduled in advance, pre-planned, and conducted throughout the calendar year. Results of these inspections are evaluated by NRC management and staff to assess licensee performance in various functional areas.

**Q24:** Who is responsible for conducting inspections of the facility after operations begin?

**A24:** (JD) The Region II office has the direct responsibility for oversight of the facility once operations begin. The Region II office, with support from NMSS and NSIR as applicable, is responsible for conducting the various inspection activities.

**Q25:** How does the NRC staff track implementation of licensee commitments during operations?

**A25:** (JD) Implementation of licensee commitments is evaluated as part of the inspection program. The Region II inspectors incorporate this into the inspection activities including planning and documenting of inspection results. Tracking and verification of compliance with licensee commitments are conducted as part of the overall inspection program.

**Q26:** Does this conclude your testimony?

**A26:** (JAD, TJ, DS, JD) Yes.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

GE-HITACHI GLOBAL LASER ENRICHMENT  
LLC

(GLE Commercial Facility)

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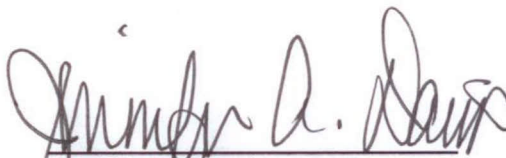
Docket No. 70-7016-ML

ASLBP No. 10-901-03-ML-BD01

June 18, 2012

AFFIDAVIT OF JENNIFER A. DAVIS

I, Jennifer A. Davis, do hereby declare under penalty of perjury that my statements in the foregoing testimony and my statement of professional qualifications are true and correct to the best of my knowledge and belief.

  
Jennifer A. Davis

Executed at Rockville, Maryland  
this 18th day of June, 2012

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

GE-HITACHI GLOBAL LASER ENRICHMENT )  
LLC )

(GLE Commercial Facility) )

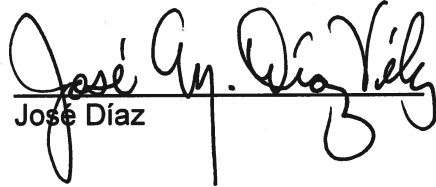
Docket No. 70-7016-ML

ASLBP No. 10-901-03-ML-BD01

June 18, 2012

AFFIDAVIT OF JOSÉ DÍAZ

I, José Díaz, do hereby declare under penalty of perjury that my statements in the foregoing testimony and my statement of professional qualifications are true and correct to the best of my knowledge and belief.

  
José Díaz

Executed at Atlanta, Georgia  
this 18th day of June, 2012

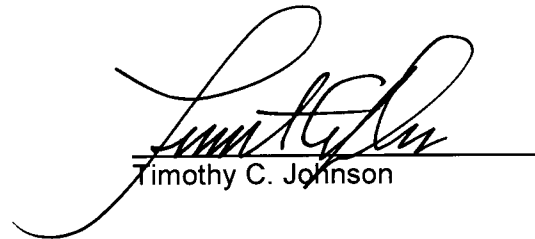
UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	Docket No. 70-7016-ML
	)	
GE-HITACHI GLOBAL LASER ENRICHMENT	)	ASLBP No. 10-901-03-ML-BD01
LLC	)	
	)	June 18, 2012
(GLE Commercial Facility)	)	

AFFIDAVIT OF TIMOTHY C. JOHNSON

I, Timothy C. Johnson, do hereby declare under penalty of perjury that my statements in the foregoing testimony and my statement of professional qualifications are true and correct to the best of my knowledge and belief.

  
\_\_\_\_\_  
Timothy C. Johnson

Executed at Rockville, Maryland  
this 18th day of June, 2012

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	Docket No. 70-7016-ML
	)	
GE-HITACHI GLOBAL LASER ENRICHMENT	)	ASLBP No. 10-901-03-ML-BD01
LLC	)	
	)	
(GLE Commercial Facility)	)	June 19, 2012

AFFIDAVIT OF DEBORAH SEYMOUR

I, Deborah Seymour, do hereby declare under penalty of perjury that my statements in the foregoing testimony and my statement of professional qualifications are true and correct to the best of my knowledge and belief.

  
Deborah Seymour

Executed at Atlanta, Georgia  
this 19th day of June, 2012



**Jennifer Davis**  
**Statement of Professional Qualifications**

**CURRENT POSITION**

Senior Project Manager  
Environmental Review Branch  
Environmental Protection and Performance Assessment Directorate  
Division of Waste Management and Environmental Protection  
Office of Federal and State Materials and Environmental Management Programs  
U.S. Nuclear Regulatory Commission  
Washington, D.C.

**EDUCATION**

B.A., Historic Preservation/Classical Civilization, Mary Washington College

**PROFESSIONAL**

Duke University Environmental Leadership Courses: The Law of NEPA, Accounting for Cumulative Effects  
The Shipley Group: Cultural and Natural Resource Management  
National Preservation Institute: Integrating Cultural Resources in NEPA Compliance: Environmental Assessment, Cultural Resource Management and Historic Preservation Responsibilities and their Implementation Through the NEPA Process  
SWCA Environmental Consultants: Issues in Section 106: Advanced  
Advisory Council on Historic Preservation: The Section 106 Essentials, Section 106 – An Advanced Seminar

**QUALIFICATIONS**

Ms. Davis has 10 years of experience managing and participating in major, multidisciplinary environmental projects for U.S. Nuclear Regulatory Commission (NRC) within the Offices of Nuclear Reactor Regulation (NRR) and the Office of Federal and State Materials and Environmental Management Programs (FSME). This experience includes National Environmental Policy Act (NEPA) reviews and preparation of environmental impact statements (EISs). She also supports environmental reviews managed by other NRC staff, reviews NEPA documents prepared by others, analyzes and determines NEPA documentation requirements for nuclear materials facilities, and contributes to the development of guidance associated with the preparation of NRC NEPA documents. Ms. Davis also serves as a technical reviewer for field of historic and cultural resources and National Historic Preservation Act (NHPA) Section 106 compliance and has provided technical support to other program offices.

As a Senior Project Manager at the NRC, Ms. Davis has planned, led, and participated in major, complex multidisciplinary environmental reviews and development of EISs for licensing of nuclear facilities under NRC regulations in Title 10 of the *U.S. Code of Federal Regulations* (10 CFR) Parts 40, 70, 51, and 54. She serves as the EIS project manager for the proposed

General Electric-Hitachi Global Laser uranium enrichment facility near Wilmington, North Carolina. During this review, Ms. Davis also provided technical support in finalizing the first three in-situ recovery supplemental EISs and assisted project managers in Section 106 compliance.

Prior to joining FSME, Ms Davis served both as an environmental scientist and project manager in the Division of License Renewal (DLR) within NRR. Ms. Davis has served in a leadership role on a number of significant projects including the update to *Generic Environmental Impact Statement (GEIS) for License Renewal of Nuclear Plants* (NUREG-1437, Volumes 1 and 2) and supported the associated rulemaking, lead project manager for Monticello LR application (NUREG-1437, Supplement 26); provided technical oversight/support for 25 license renewal reviews; support and authored historic and archaeological resource sections for Susquehanna, Beaver Valley, Three Mile Island, Prairie Island, Kewaunee, Cooper, and Prairie Island supplemental EISs to NUREG-1437; developed NRC's Section 106 through NEPA approach used in both NRR and NRO licensing reviews, and provided technical support to other license renewal, early site permit, and combined operating license reviews.

Prior to serving as an environmental scientist and project manager in DLR, Ms. Davis was a general scientist who supported environmental project managers in the assessment of environmental impacts associated with nuclear power plant operations and the preparation of EISs for license renewal and early site permit applications. This support included preparation of correspondence to external stakeholders; preparation of management briefing and public presentation materials; participation in environmental site audits, public meetings, and EIS writing sessions; and the review of technical assessments for EISs. Ms. Davis assisted in the preparation of environmental assessments for license amendments and exemptions for nuclear power plants. She assisted in the preparation and review of standards, guidelines, procedures, and requirements for assessing the impact of nuclear power plants on the environment. Ms. Davis also attended and participated in technical conferences and seminars sponsored by the NRC and/or professional societies, for the purpose of emphasizing the safety and environmental impact of nuclear power plants while serving as a technical expert in the field of archaeology.

Prior to joining the NRC, Ms. Davis worked for Old Dominion University Research Foundation and served as their payroll coordinator. She also served as a field archaeologist for Louis Berger and Associates in 1996.

**José M. Díaz Vélez**  
**Statement of Professional Qualifications**

**CURRENT POSITION**

Sr. Fuel Facility Project Inspector  
Fuel Facility Inspection Branch 2  
Division of Fuel Facility  
Region II Office  
U.S. Nuclear Regulatory Commission  
Atlanta, Ga 30303

**EDUCATION**

M.Div., Biblical Languages, New Orleans Baptist Theological Seminary, New Orleans, LA  
B.S., Physics, University of Puerto Rico, Mayaguez, PR

**PROFESSIONAL**

Fuel Facility Material Control and Accounting Inspector (July 2011)  
Reactor Health Physics Inspector (July 2006)  
Materials License Reviewer (August 2003)  
Materials Radiation Specialist Inspector (August 1994)

**QUALIFICATIONS**

Mr. Díaz is an NRC Region II inspector with over 19 years of experience implementing the NRC Inspection Program. As a Sr. Fuel Facility Project Inspector for the Nuclear Regulatory Commission, Mr. Díaz is responsible for inspection project oversight over the USEC-Paducah Gaseous Diffusion Plant project. He is responsible for the planning, coordination, and implementation of projects assigned in support of the inspection program. This includes items such as allegations, Commissioner/VIP visits, the inspection planning process, open item tracking and enforcement actions. He also coordinates other activities with NRC offices, government agencies, and the public. Mr. Díaz performs assessment and analysis of complex issues and recommends appropriate NRC Response.

Reviews allegations; plant activities and issues; inspection findings and proposed enforcement actions; licensee reports; and notices of enforcement discretion. He ensures technical adequacy, accuracy, and proper content of reviewed materials, including any corresponding NRC response as appropriate. Mr. Díaz performs evaluations for potential generic issues, and integrates inspection findings into the overall assessment of safety performance at his assigned facility. He makes recommendations for Agency response and actions involving inspection and/or enforcement action.

Responsible for planning and conducting assigned inspections. In addition to support the Regional-based inspection program, Mr. Díaz supports the fuel facility safeguards inspection program in the area of Material Control and Accounting, which is HQ-based. Performs observations and evaluate licensee's compliance with NRC regulatory requirements, license requirements, technical specifications, safety analyses, orders, and industry codes and standards. When requested, he serves as inspection team leader, conducts inspections of

allegations, and participates in emergency preparedness exercises. He voluntarily supports the Regional Incident Response Center when activated.

Mr. Díaz is responsible for preparing written materials associated with allegations, inspections, and responses to outside inquiries. He integrates inspection inputs from other inspectors into team inspection reports. He serves as a mentor and coach of new inspectors. Mr. Díaz performs other duties as assigned, including acting as branch chief in his Division when assigned.

As an NRC Materials Radiation Specialist Inspector, Mr. Díaz was responsible for safety inspections at medical, academic, and industrial facilities that used Byproduct Materials under Title 10 CFR Parts 30-39. Mr. Díaz was also responsible for project inspection oversight of the US Navy Master Materials License and the Centers for Disease Control and Prevention licenses.

As an NRC Materials License Reviewer, Mr. Díaz was responsible for the review of license applications pursuant to medical, academic, and industrial uses of Byproduct Materials. He was responsible for ensuring that applicants meet the minimum licensing requirements for such facilities.

As an NRC Reactor Health Physics Inspector, Mr. Díaz was responsible for performing radiation safety inspections at Nuclear Power Reactors. These inspections included Radiological Environmental Monitoring Program inspections, Radioactive Gaseous and Liquid Effluent Treatment inspections, Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation inspections at Nuclear Power Reactors.

As an NRC Material Control and Accounting (MC&A) Inspector, Mr. is responsible for implementing the NRC Inspection Program to ensure that the licensee's MC&A system adequately detects and protects against the loss, theft, or diversion of special nuclear material (SNM) that the licensee is authorized to possess, store, and use.

**Timothy C. Johnson**  
**Statement of Professional Qualifications**

**CURRENT POSITION**

Senior Project Manager  
Uranium Enrichment Branch  
Division of Fuel Cycle Safety and Safeguards  
Office of Nuclear Material Safety and Safeguards  
U.S. Nuclear Regulatory Commission  
Washington, D.C.

**EDUCATION**

M.S., Nuclear Engineering, Ohio State University  
B.S., Mechanical Engineering, Worcester Polytechnic Institute

**PROFESSIONAL**

American Nuclear Society, Member  
American Society of Mechanical Engineers, Member  
American Society for Testing and Materials, Member

**QUALIFICATIONS**

Mr. Johnson is a nuclear engineer with over 39 years of work experience in industry and in the Federal government. He has been working in the areas of radioactive waste processing, low-level radioactive waste management, high-level radioactive waste management, decommissioning, and uranium enrichment facility licensing.

Mr. Johnson is currently the Licensing Project Manager of the General Electric-Hitachi Global Laser Enrichment (GE) uranium enrichment plant project in the Uranium Enrichment Branch, Division of Fuel Cycle Safety and Safeguards, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission. Mr. Johnson received a Bachelor of Science degree in Mechanical Engineering from Worcester Polytechnic Institute in Worcester, Massachusetts, in 1971 and a Master of Science degree in Nuclear Engineering from Ohio State University, in Columbus, Ohio, in 1973. Courses he has taken that are pertinent to his present discipline are in the areas of advanced mathematics, engineering design, mass and heat transport, thermodynamics, reactor theory, nuclear physics, nuclear power plant engineering, and health physics. He was elected to membership in Pi Mu Epsilon, the mathematics honorary society.

From January 1973 to August 1977, Mr. Johnson was employed by Stone & Webster Engineering Corporation in Boston, Massachusetts. As the offgas and ventilation filter system specialist, he was responsible for the technical adequacy of offgas and ventilation filter systems for pressurized water reactor, boiling water reactor, high temperature gas cooled reactor, and liquid metal fast breeder reactor projects. His responsibilities included ensuring that equipment met both applicable regulatory and equipment code requirements. He prepared master specifications for offgas and ventilation filter systems for use by project staff. He reviewed project specifications and performed technical reviews of vendor proposals. He also reviewed vendor procedures for qualification and testing of offgas and ventilation system components.

Since September 1977, Mr. Johnson has been employed by the U.S. Nuclear Regulatory Commission in the areas of radioactive waste management, decommissioning, and fuel cycle facility licensing.

From September 1977 to April 1984, Mr. Johnson had lead responsibility for the waste form performance aspects of low-level radioactive wastes to include radwaste processing, solidification, high integrity containers, and volume reduction systems. In this capacity, he developed programs for analyzing, evaluating, coordinating, and recommending licensing actions related to the waste form and waste classification areas of 10 CFR Part 61. These responsibilities have specifically included coordinating the development of the waste form and waste classification requirements and preparing the appropriate sections for: (1) the low-level waste management regulation, 10 CFR Part 61; (2) the draft and final environmental impact statements that support 10 CFR Part 61; and (3) the technical positions on waste form and waste classification that provide guidance to waste generators for complying with the 10 CFR Part 61 requirements. He also acted as lead for an intra-agency task group for implementation for the 10 CFR Part 61 requirements at nuclear power plants.

During this time, Mr. Johnson also participated on a Task Force responsible for Three Mile Island Unit 2 (TMI-2) waste disposal issue resolution to include the evaluation of EPICOR-II, Submerged Demineralizer System, and decontamination solution wastes. He also prepared and coordinated the waste disposal section for the TMI-2 Programmatic Environmental Impact Statement.

From April 1984 to April 1987, Mr. Johnson was Section Leader of the Materials Engineering Section in the Division of Waste Management. In this capacity, he supervised a section that performed technical and engineering evaluations of low-level and high-level radioactive waste packages. This included planning and executing section programs, providing technical direction and integration of materials concerns into NRC low-level and high-level waste licensing activities, and supervising the management of technical assistance programs.

From April 1987 to May 1992, Mr. Johnson was Section Leader of the Special Projects Section in the Division of Waste Management. In this capacity, he supervised a section responsible for mixed wastes, decommissioning of materials licensee facilities and power reactors, financial assurance for decommissioning materials licensees and low-level waste disposal facilities, greater than Class C wastes, low-level waste disposal site quality assurance, and the low-level waste data base.

From May 1992 to November 1999, Mr. Johnson was Section Chief of decommissioning sections in the Division of Waste Management responsible for developing and executing the Site Decommissioning Management Plan (SDMP), an agency effort to ensure that 17 decommissioning policy issues were resolved and over 40 non-routine decommissioning sites would be properly decommissioned. During this time, he acted as Project Manager for the decommissioning of the Chemetron site in Cleveland, Ohio, a controversial contaminated site located in a residential neighborhood. The site was remediated and the license terminated in 1998.

From November 1999 to the present, Mr. Johnson was a Senior Project Manager in the Division of Fuel Cycle Safety and Safeguards. In this position, he acted as deputy project manager for the Mixed Oxide Fuel Fabrication Facility licensing and project manager for the licensing of gas centrifuge uranium enrichment facilities. He also was the Project Manager of the Louisiana

Energy Services uranium enrichment plant from the project's inception in 2000, through licensing, and into initial plant construction until 2009. As Project Manager, he coordinated the licensing review of the licensing application. He also provided testimony in contested and mandatory hearings for this facility in the areas of uranium enrichment facility licensing, the disposition of depleted uranium, and decommissioning financial assurance. He is currently the Project Manager for the General Electric-Hitachi Global Laser Enrichment uranium enrichment plant responsible for coordinating the licensing review of the facility.

Mr. Johnson has prepared over 25 presentations and papers given at conferences and has been an instructor at American Society of Mechanical Engineering, Harvard School of Public Health, and NRC training courses in the areas of low-level waste management, decommissioning, and uranium enrichment facility licensing.

**Deborah Seymour**  
**Statement of Professional Qualifications**

**CURRENT POSITION**

Branch Chief  
Construction Projects Branch 1  
Division of Construction Projects  
U.S. Nuclear Regulatory Commission  
Region II, Atlanta, GA

**EDUCATION**

B.S., Chemical Engineering and Materials Engineering, University of Connecticut.

**PROFESSIONAL**

Material Control and Accountability Inspector Qualification, NRC, 1988  
Heath Physics Inspector Qualification, NRC, 1990  
PWR Operations Inspector Qualification, NRC, 1994  
Senior Resident Inspector Development Program Graduate, NRC 1997  
Fuel Cycle Safety Inspector Qualification, NRC, 2000  
Sigma Xi, member  
Tau Beta Pi, member

**QUALIFICATIONS**

Ms. Seymour has worked for the NRC for 25 years. Currently, she is the branch chief for Construction Projects Branch 1 in the Division of Construction Projects in NRC's Region II Office in Atlanta, GA. Her primary responsibility is providing direction and oversight to the construction inspection programs at fuel facilities under construction in the United States, including the Mixed Oxide (MOX) Fuel Fabrication Facility at the Savannah River Site in Aiken, SC. She has held a number of other positions at the NRC, including:

- Senior Project Inspector, National Enrichment Facility
- Senior Fuel Facilities Project Inspector for Westinghouse Electric Company, Global Nuclear Fuels, Babcock and Wilcox Nuclear Operations Group, AREVA Lynchburg, and AREVA-Washington.
- Resident Inspector, Sequoyah Nuclear Power Plant
- Project Engineer, Vogtle, Hatch, and Sequoyah Nuclear Power Plants
- Inspector for Radiological Effluents and Chemistry (fuel facilities and reactors)
- Inspector, Material Control and Accounting (fuel facilities and reactors)

Prior to joining the NRC, she also held positions at the Institute of Material Sciences, at the University of Connecticut; and at the J.M. Ney Company, a precious metal refinery in Bloomfield Connecticut.