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Subject: Site Visit Collection Plan
Attachments: GLE EIS Site Visit Information Needs_050109.doc

See attached NRC Site Visit Collection Plan for your information.

clb

**U.S. NUCLEAR REGULATORY COMMISSION
INFORMATION COLLECTION PLAN FOR THE
THE GENERAL ELECTRIC – HITACHI GLOBAL LASER ENRICHMENT
FACILITY (GLE) ENVIRONMENTAL SITE VISIT**

May 1, 2009

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GENERAL INFORMATION (GE)

ITEM NO.	
GE-1	<p>Provide an overall site tour that shows:</p> <ul style="list-style-type: none"> • The proposed GLE Study Area, and locations of major proposed project facilities including <ul style="list-style-type: none"> ○ GLE Facility building, electrical substation, wastewater lift stations, access roads, guard houses, water tower, stormwater detention basin, waste management buildings, and depleted uranium hexafluoride (UF₆) cylinder storage yards. ○ Proposed locations of cooling towers, cooling water system intake and discharge points, and points of environmental emissions from the proposed facility. • Major existing air emission sources and control equipment (e.g., boilers, diesel generators), and their release points on the site. • Existing and proposed locations of major indoor and outdoor noise sources (e.g., pumps, transformers) and control measures on the site. • Existing structures and facilities onsite, including the Wilmington Site final process lagoon, sanitary wastewater treatment facility, and SILEX test loop facility • Proposed interfaces between the proposed facility and existing infrastructure, and • Surrounding areas and features including major roads, and the nearest and other nearby residences.
GE-2	Provide originals of all Environmental Report Rev. 0, December 2008 (the "ER") figures in .jpeg, .png or .tif format at a resolution of at least 300 dpi, and sized correctly. (Note: these are not needed at the site visit itself, but could be provided shortly thereafter.)
GE-3	Provide separate layers for GIS files given in the attached list as shapefiles. (Note: these are not needed at the site visit itself, but could be provided shortly thereafter.)
GE-4	Provide available ER references in either electronic or hard copy form. For documents that will be regularly used by the EIS team (e.g., the ER and site environmental report), provide both hard copy and electronic versions, and have at least two copies for review. For electronic copies, provide multiple computer terminals (e.g., laptops) for viewing these at the site visit.
GE-5	Provide or make available copies of environmentally relevant permits related to the existing facilities at the site.
GE-6	Provide copies of the input/output files and calculation packages for the major computer codes used in the preparation of the ER, including AERMOD, MOBILE6, NONROAD model, XOQDOQ, COMPLY, GENII, MODFLOW, and RADTRAN. Note, these are also requested in individual topical areas below.

GE-7

Provide a team of knowledgeable experts to discuss the assumptions made, the data and models used and the results presented in the ER in the following disciplines:

- Accident Analysis
- Air Quality, Meteorology, and Noise
- Cultural Resources
- Cumulative Impacts
- Ecology
- Human Health – Non Radiological
- Human Health – Radiological
- Hydrology and Geology
- Socioeconomics and Environmental Justice
- Transportation
- Waste Management

ACCIDENT INFORMATION (AC)

ITEM NO.	
AC-1	Provide the definitions used for the likelihood categories "not unlikely," "unlikely," and "highly unlikely" as they apply to the GLE Facility. Provide descriptions of the accidents considered in the analysis including the likelihood category and time-dependent source terms (releases of radionuclides and chemicals to the environment) for each accident. Identify the bounding accident for each likelihood category. Provide this information for both chemical and radiological accidents.
AC-2	Provide information on how the accident sequences were developed, how the accidents were classified into individual likelihood categories and how the consequences were calculated. Provide the inputs and outputs of the computer models used to calculate the consequences. Provide the consequences and risks of the bounding accidents (both chemical and radiological) in each likelihood category. Provide the consequences to workers (in plant and other workers on site) and the general public.
AC-3	Provide information on preventive and mitigative measures that would be in place to minimize the impacts of the bounding accidents.
AC-4	Provide copies of the Integrated Safety Assessment (ISA) and the Emergency Plan (EP).

AIR QUALITY, METEOROLOGY, AND NOISE (AQ)

ITEM NO.	
AQ-1	Provide the Universal Transverse Mercator (UTM) coordinates or latitude and longitude of air emission and noise sources (existing and proposed), and neighboring sensitive receptors (e.g., nearest and nearby residences, schools, hospitals, nursing homes, daycare centers). An electronic file of a map is preferred to read off the coordinates.
AQ-2	<p>The items to be discussed with the knowledgeable air quality/meteorology expert during the site visit include:</p> <ul style="list-style-type: none"> • The basis of the air quality and meteorology in the ER (Sections 3.6 and 4.6 and related appendices) including general assumptions, emission inventories and emission control measures, air quality modeling, and their impact analysis. • General routine activities during the operational period to identify air emission sources. • Heat sources and dissipation systems on the site. • Existing and future major air emission sources around the facility. • General air quality conditions around the facility, in New Hanover County, and the region. • Emissions inventories and air dispersion modeling for hazardous air pollutants (HAPs) and toxic air pollutants (TAPs). • Local and regional meteorological patterns. • Variations of meteorological variables and air dispersion patterns resulting from proximity to the Atlantic Ocean.
AQ-3	<p>The items to be discussed with the knowledgeable noise expert at the site visit include:</p> <ul style="list-style-type: none"> • The basis of the noise analysis in the ER (Sections 3.7 and 4.7) including general assumptions, noise emission inventories and noise control measures, noise propagation modeling, and their impact analysis. • Existing and future major noise sources around the facility. • Recent noise measurements on the site. • Noise complaints and their resolution if any.
AQ-4	Provide input and output data (including raw and processed data) and calculation packages for the major computer codes used in the air quality modeling analysis, including AERMOD modeling system (AERMAP/AERMET/AERSURFACE/AERMOD), MOBILE6, NONROAD model, and XOQDOQ; electronic files are preferred.
AQ-5	Provide input and output data (including octave-band sound levels, directivity, emission point and height, and receptor grids) used in the noise propagation modeling analysis; electronic files are preferred.
AQ-6	If available, provide emissions data for greenhouse gases (e.g., CO ₂) associated with construction and operation of the GLE facility.
AQ-7	Provide available copies of air permits related to existing facilities on the Wilmington Site.
AQ-8	Provide sound levels for major interior noise sources and exterior noise sources (e.g., pumps, transformers) during operation. No noise modeling for these sources was presented in the ER.

ITEM NO.	
AQ-9	Provide air emission inventories for PM _{2.5} which were not presented in the emissions summary tables of the ER. Note that air dispersion and deposition behaviors and associated health impacts of PM _{2.5} are different from those of PM ₁₀ .

CULTURAL RESOURCES INFORMATION (CR)

ITEM NO.	
CR-1	The ER mentions 22 previously known sites but does not identify what types of sites these are (base camp, village, towns, etc.). Provide copies of the sites forms for these sites.
CR-2	Have there been any interactions with the Eastern Band of Cherokee Indians of North Carolina or other Native Americans in the region? Provide copies of any correspondence or interactions with Native Groups.
CR-3	Does the existing plant maintain Environmental Protective Measures? There is a high potential for archaeological sites to be on the plant grounds. How does the facility operator ensure that cultural resources on the property are protected? Provide a copy of the environmental review and protection procedures that are used to protect resources on the site.
CR-4	Provide a copy of the procedures used for unexpected discoveries of human or archaeological remains.

CUMULATIVE IMPACT INFORMATION (CI)

ITEM NO.	
CI-1	Provide a description of the region of influence used in bounding the cumulative impacts analysis.
CI-2	Provide a description of the methodology used to identify reasonably foreseeable future actions in the region of influence.
CI-3	Provide information on the habitats and land cover types that would be affected by developments on site.
CI-4	A fairly detailed description of the types of impacts that would result from other facility development on the Wilmington Site is provided in the ER. If available, provide comparable information for offsite developments.
CI-5	To determine the magnitude of cumulative impact on the Wilmington Site, the cumulative amount of resource use (past, present, and future) should be compared to the existing baseline (total acres of different habitat or land cover types, wastewater treatment capacities, water supply system capacity, electric system capacity). Similarly, a regional comparison to baseline is needed for all projects (offsite and onsite).
CI-6	During the site tour, show the locations of other proposed facilities on the Wilmington Site.

ECOLOGY INFORMATION (EC)

ITEM NO.	
EC-1	Have environmental personnel that prepared the wetlands and ecological resources sections of the ER (and/or that conducted the wetland and ecological field surveys) available to answer questions related to impacts on ecological resources associated with the construction, operation, and mitigation of the GLE Facility. Specific aspects to be discussed include wetland impacts; stream crossings; stormwater detention basin; upland habitat loss, modification and fragmentation; and potential wildlife-human interactions.
EC-2	<p>Provide a tour of key habitat areas (e.g., areas that would be directly impacted by project construction; and areas that represent the various terrestrial, wetland, and aquatic habitat types present in the project area). These areas should include:</p> <ul style="list-style-type: none">• Location for the proposed GLE Facility;• Possible locations of new road segments and utility lines;• Access road crossing areas of Unnamed Tributary #1;• Other unnamed tributaries and Northeast Cape Fear River;• Wetlands WA, WB, WC, and WD;• Process lagoons, detention basins, woodland ponds, and other ponded waters at the Wilmington Site.• Other major wetland and terrestrial habitat types within the Wilmington Site boundary;• Areas where rare plants have been recorded;• Existing facilities at the Wilmington Site (e.g., other buildings, roads);• Areas that typify where vegetation-maintenance practices are conducted; and• Major and significant habitats near the project (this could be done as a driving tour, if time permits).

HUMAN HEALTH – NON RADIOLOGICAL INFORMATION (HH/NR)

ITEM NO.	
HH/NR-1	<p>The items to be discussed with the knowledgeable human health expert for non-radiological exposures during the site visit include:</p> <ul style="list-style-type: none">• Current levels of contaminants in air, water, and soil in the vicinity of the plant, including emission rates for uranium compounds, hydrogen fluoride (HF), and criteria air pollutants from the existing Fuel Manufacturing Operation (FMO) plant and contaminant levels in the shallow and principal aquifer under the site.• The availability of any public health studies that have been conducted as a result of concerns for potential health impacts from chemical emissions from the existing FMO facility.• The expected occupational exposure levels to be present in the proposed GLE facility for uranium compounds, HF, and any other process related toxic chemicals and any monitoring, mitigation measures, control devices, and safety procedures that will be employed to control exposures to acceptable levels.• Laser safety as well as general occupational safety programs that will be used in the proposed GLE facility.

HUMAN HEALTH – RADIOLOGICAL INFORMATION (HH/R)

ITEM NO.	
HH/R-1	Provide information on the radiation protection plan for the existing FMO facility and the proposed GLE facility.
HH/R-2	Provide the liquid effluent releases for the existing FMO facility and doses from these releases to the maximally exposed individual (MEI) and the public. Section 3.11.2 (page 3.11-2) of the ER mentions gaseous effluent releases but nothing is mentioned about the liquid effluent releases and its contribution to the MEI dose. To demonstrate compliance with the dose limits in 10 CFR 20 and 40 CFR 190, dose contributions from both gaseous and liquid effluents should be included.
HH/R-3	<p>Provide background concentration in the vegetation in the region (e.g., recent reports from the North Carolina Division of Radiation Protection [NCDRP]).</p> <p>A summary of NCDRP data from analysis of vegetation samples collected from locations approximately one mile north and one mile south of GNF-A Wilmington is shown in Exhibit E-21(GNF-A ER 2007). This exhibit indicates gross alpha concentration in many vegetation samples. The GLE ER (page 3.11-2) mentions that these analyses “show very low gross alpha activity concentrations, thus indicating no radiological impact from Site operations. Based on these data, no future radiological impact from the FMO facility to cropland and agricultural areas in the vicinity of the site would be expected.”</p>
HH/R-4	Provide information on the uranium isotopic mix found in onsite and offsite soil samples collected on the Wilmington Site. Tables 3.11-6 and 3.11-7 in the GLE ER list average uranium concentrations in soil samples collected onsite and offsite in ppm. A different isotopic mix would result in different soil activities. The onsite soil concentration would be used in estimating the dose to the construction worker.
HH/R-5	<p>Provide information about the ongoing and planned radiological environmental monitoring program for FMO and GLE.</p> <p>Table 3.11-6 provides uranium concentrations at two locations (20 and 21) up to 1997. These two sample locations had the maximum uranium concentrations. The measurement at these locations was discontinued in 1998 because the use of the storage pad was minimized at that time and the soil concentration at those locations had stabilized. What is the current soil concentration at those locations? Would the construction workers be near these locations? Would these areas be disturbed in any way during GLE operation?</p>
HH/R-6	<p>Provide information about existing groundwater and surface water contamination and its impacts to the public.</p> <p>Exhibit E-19 (GNF-A ER, 2007) lists the surface water concentrations in the samples collected at two onsite and one offsite location (the data are only up to 1999) and in some of the onsite samples concentrations greater than 100 pCi/L were observed. Similarly, Exhibit E-30 in the GNF-A ER (2007) lists concentrations in supply wells. For 2003 and 2004 in supply well #9A Exhibit 30 lists gross alpha and beta concentrations > 500 pCi/L.</p>
HH/R-7	Provide input and output data and calculation packages, and a knowledgeable expert who can discuss application of the COMPLY computer code. GLE ER Section 3.11.4.1 (page 3.11-3 and 3.11-4) mentions that EPA’s COMPLY code was used to calculate the MEI and population doses.
HH/R-8	Provide justification for using 200,000 persons in calculating the population dose. The ER Section 3.11.4.1 (page 3.11-3) does not identify the region of influence.

HH/R-9	If available, provide more current data on radioactive gaseous emissions, airborne gross alpha and isotopic concentrations in different directions, uranium concentration in soil, radiation dose to nearest resident, and recordable accidents. The latest data provided in Tables 3.11-1 to 3.11-7 and 3.11-10 of the GLE ER is for 2005.
HH/R-10	Provide any available public health studies that have been conducted in the vicinity of the site for potential health impacts from radioactive effluent (gaseous and liquid) releases from the existing FMO facility. These studies would establish the baseline for the Wilmington area.
HH/R-11	Provide the calculation of doses to workers during site preparation and construction activities. Construction workers would be exposed to onsite soil contamination, direct exposure sources, liquid and gaseous emissions from existing release locations. The ER does not provide construction worker doses. To estimate these doses, one would need different media concentrations to which the workers may be exposed at the locations where the construction activities would occur, number of workers involved in those activities, and the time spent at those locations.
HH/R-12	Provide information on the distances from the proposed facility to the nearest site boundary for each radial sector, and the distances to the nearest residence, school, and other sensitive receptor locations (such as hospitals, agricultural areas, etc.).
HH/R-13	Provide estimated doses to the occupational workers from the proposed facility. The workers would be exposed to radiation during the normal operation of the proposed facility. The ER does not provide estimation of the occupational dose.
HH/R-14	ER Section 4.12.2.2.2.2 (page 4.12-10) mentions that GENII (version 2.06) code was used to calculate doses. Provide information on exposure pathways and the calculation of doses to the public and populations. Provide input and output data and calculation packages, and a knowledgeable expert who can discuss application of the GENII computer code.
HH/R-15	Different sample types (continuous film badges, TLDs, pocket dosimeters, continuous air particulate filter, grab samples, sample of liquid effluent, storm water grab samples) in different media (direct radiation, air, surface water, treated process wastewater effluent, treated sanitary wastewater effluent, groundwater, storm water, soil, and sediment) are collected under the GLE environmental monitoring program. Provide the latest measurement results from the environmental monitoring program. ER Table 6-1 provides the summary of the GLE environmental monitoring program, but the results of these measurements are not provided. This would help in defining the baseline of the site and also the adequacy of the sampling plan for the proposed facility. The ER does have some data from previous years (for example Tables 3.4-3 and 3.4-4 show groundwater data from 2002-2006; Table 3.4-8 shows surface water data from 1997 – 2006; Table 3.4-11 provides uranium content in storm water for 2003)
HH/R-16	Provide information on the public and occupational health impacts from decontamination and decommissioning activities.

HYDROLOGY AND GEOLOGY INFORMATION (HY)

ITEM NO.	
HY-1	Provide the current NPDES permit for the Wilmington Site, and information on past and proposed future pollutant discharges.
HY-2	Provide documentation on the groundwater monitoring plan (well locations, sampling frequency, well construction, drilling logs, and cross sections).
HY-3	Provide MODFLOW input files (general, non-proprietary format) used in work in Appendix P, and documentation and input files for any modeling updates, including transport of trichloroethylene (TCE).
HY-4	Provide a copy of the facility Stormwater Pollution Prevention Plan.
HY-5	Provide a tour of current site facilities, present and proposed outfalls, surface water features, wetlands, production wells, remediation systems, and the stormwater system.
HY-6	Provide information regarding outfall dimensions, elevations, receiving surface waters' velocity distributions and cross sectional areas, and bathymetry near outfalls
HY-7	Provide historical site groundwater monitoring reports (reports for the previous 10 years are of interest).
HY-8	Provide permits for surface water use and groundwater use
HY-9	<p>The items to be discussed with the knowledgeable hydrology expert during the site visit include:</p> <ul style="list-style-type: none"> • Water flow rates or use rates for cooling, service, blowdown, potable, sewage, discharges, remedial system); • Additives to water systems; • Documentation regarding any notices of violation; • Any radioactivity releases or general contaminant releases to groundwater, including TCE; • Past or potential future dredging operations; and • Groundwater quality issues

SOCIOECONOMICS/ENVIRONMENTAL JUSTICE INFORMATION (SE)

ITEM NO.	
SE-1	Provide copies of any correspondence and communications with local and regional officials and citizens confirming that there are no additional areas with minority and low-income populations within 4 miles of the GLE site, beyond those identified in the ER.
SE-2	Provide copies of any correspondence and communications with local and regional officials and citizens confirming that areas within 4 miles of the GLE site are not used for subsistence purposes by low income or minority groups.
SE-3	Provide copies of any correspondence and communications with local public officials to determine significance of impact of GLE construction and operation on the provision of local public and educational services.
SE-4	Provide any correspondence and communications with local public officials to determine significance of impact of GLE construction and operation on housing availability in the region, and any conflicts with proposed housing developments in the vicinity of the site.
SE-5	For the region of influence, provide data on indirect economic impacts of facility pre-construction, construction, operation, and decommissioning, estimated using input-output multipliers, including: <ul style="list-style-type: none"> • Impacts on labor income • Impacts on employment

TRANSPORTATION INFORMATION (TR)

ITEM NO.	
TR-1	Provide information about the assumptions and input parameters used for the RADTRAN calculations performed in support of the radioactive transportation risk analysis. Relevant input parameters include external dose rates for shipments, shipment dimensions, crew distance, and stops information. Provide the RADTRAN input and output files from the incident-free analysis for all material types (UF ₆ feed, UF ₆ product, UF ₆ tails, empty cylinders with heels, and LLRW).
TR-2	Provide additional information necessary to perform a RADTRAN accident risk analysis. Such information includes the radionuclide inventory (Ci content) for shipments of each material type (UF ₆ feed, UF ₆ product, UF ₆ tails, empty cylinders with heels, and low-level radioactive waste).
TR-3	<p>Provide information on the number of radioactive material shipments and types that currently take place at the Wilmington Site. The number of these types of shipments is relevant to a proper discussion of cumulative impacts in the EIS and is relevant to potential exposures to a maximally exposed individual near the site entrance.</p> <p>This information could be discussed in more detail with the transportation expert during the site visit.</p>

WASTE MANAGEMENT INFORMATION (WM)

ITEM NO.	
WM-1	Provide information on the types and quantities (e.g., mass/volume) of waste that might be expected to be generated from the construction of the GLE facility and where they may be taken for disposal.
WM-2	The items to be discussed with the knowledgeable waste management expert during the site visit include: <ul data-bbox="426 562 1389 730" style="list-style-type: none"><li data-bbox="426 562 1389 653">• The basis for the estimated waste volumes provided in the ER for operations of the GLE facility. A discussion of the sources of the waste (e.g., the industrial processes used) is needed to understand the types and quantities of wastes generated.<li data-bbox="426 667 1389 730">• The radionuclide inventory of the wastes generated. Such information is required for the transportation analysis (See TR-2)