From: Bo Pham
To: "Dara Gray" <DGray@entergy.com>
Date: 8/22/2007 3:09:22 PM
Subject: Site Audit list
cc: "Jill Caverly" <JSC1@nrc.gov>,<IPNonPublicHearingFile@nrc.gov>

Dara,

Attached is a generic list that the NRC staff uses for all audits. Please let me know if you have any questions. Thanks.

Bo Pham
Project Manager
Division of License Renewal
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Subject: Site Audit list
Creation Date: 8/22/2007 3:09:22 PM
From: Bo Pham

Created By: BMP@nrc.gov

Recipients
"Jill Caverly" <JSC1@nrc.gov>
<IPNonPublicHearingFile@nrc.gov>
"Dara Gray" <DGray@entergy.com>

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None

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Socioeconomic Impacts and Land Use

AUDIT ACTIVITIES:

In-Plant Activities.

On the site audits, request and review the following data from the plant:

- Residential locations, by city and county, of full-time plant employees. Latest data available.
- Projected work force changes, if any, for renewal term.
- Property taxes paid by the plant to all relevant cities, counties and school districts. Latest data available.
- Approximate on-site land area used by major structures and facilities, in sq. ft.
- Approximate height of major on-site buildings and structures, in ft.
- Information on plant noise and what can heard at the site boundaries.
- Site acreage.
- Land use percentages.
- On-site non-plant related visitor activities.
- Adjacent land use.

General Site (and off-site) Tour.

Objective is to observe conditions, verify descriptions in ER, and identify important visible impacts:

- County Zoning Ordinances
- Federal lands and Native American lands need to be identified.
- Current state of housing in the area (description of the affected environment)
- Current state of educational resources
- Presence or absence of migrant/transient populations.

Agengy/Authority Meetings.

1. Objective is to obtain perspective of local authorities regarding plant operation and impacts. Agencies to meet typically include the mayor's office or equivalent local executive and the urban planning or economic development offices, where focus of discussion should be on impacts of tax receipts and plant staff changes required for refurbishment (if needed) and renewal term operations for:
    - Housing
    - Public utilities (emphasis on local water supply)
    - Public services (refurbishment only - education)
    - Off-site land use
    - Transportation

2. Request any information relevant to Environmental Justice (e.g., any subsistence farming/fishing-dependent minority groups)

Historic and Archaeological Resources

AUDIT ACTIVITIES:

In-Plant Activities.

Objective is to obtain original reference material sited in ER, verify environmental compliance activities related to terrestrial ecology, and gain overview of site and issues.

1. Review key references from ER especially survey reports.

2. Review series of aerial photographs of the entire site and transmission line(s) (viewing pre-construction, during construction, and post construction) looking at levels of disturbance that occurred during construction or since operation, whether any historic structures or possible sites are present on the property, and reviewing documentation for any recent projects.

3. Review topographic maps of site and transmission line(s).

4. Review habitat/vegetation/land use maps of site and transmission line(s).

5. Participate in field tour of site and transmission line(s) - visit any known archaeological sites or historic structures or sites present on the property or along the transmission line(s); gain familiarity with the general environment and the levels of ground disturbance present in various portions of the property; view recent projects that have occurred on the property since original facility construction.

6. Discuss with technical counterparts at the plant or ER preparers (contractors) any questions arising from the ER review prior to the audit; the environmental review procedures; documentation of projects applying those procedures; knowledge of past surveys; known resources of concern; transmission line maintenance procedures, etc.

7. Review environmental review procedures pertaining to ground disturbing activities; review procedures pertaining specifically to archaeological sites (including any procedures regarding unanticipated discoveries of archaeological material or human remains) [for sites, materials and human remains encountered onsite and along or within transmission line corridors].

8. Review applicant's transmission line vegetation management program plan, including timing of mowing, herbicide application, and clearing; inspections and repair activities conducted by helicopters or other vehicles; standard operating procedures or guidelines for applicant and any contractors; and any regulations which restrict maintenance activities (for instance looking for depth of disturbance especially with tree removal in a portion of the corridor).

9. Review transmission maintenance technician training programs.

10. Review vegetation management procedures for site and associated transmission line(s) including special procedures to avoid impacts to historic and archaeological sites.

11. Review standard operating procedures/best management practices for ground-disturbing

activities.

12. Review USGS 7.5 minute quadrangle maps of the station and associated transmission line(s).

13. Review consultation letters and other documentation indicating correspondence with the SHPO and Federally recognized Native American Tribes that have aboriginal ties to the project area.

14. Review new and significant information process and review performed by applicant.

15. Review any relevant Programmatic Agreements or MOUs that the applicant may have with the SHPO.

16. Review any survey or mitigation reports (e.g. for original FES) performed in conjunction with the plant or transmission line(s), or for other/subsequent plant activities.

17. Obtain names of any right-of-way contractors.

18. Review information on management around less developed (e.g. old growth forest) areas of plant, for instance brush removal programs near both known and un-surveyed lands.

19. Review land use maps (e.g. timber harvesting, etc.).

20. Review maps of ownership and land use on transmission lines and owner property.

21. Review maps of plant site and area showing locations of known cultural resources (known areas of cultural significance).

22. Review cultural resource management plans - how the applicant satisfies the requirements for consulting with the SHPO in the event of any needed ground-disturbing activities or in the event of a discovery of archaeological material or human remains.

General Site Tour.

Objective is to observe site conditions, verify descriptions in ER, and identify important impact pathways

- Visit (if known or if identified via site records search at SHPO office) historic and archaeological sites or potential areas for sites (e.g. streams, mounds, old growth forest, former homestead sites, cemeteries, lithic scatter, etc.)
- Tour transmission line(s) to determine presence of historic or archaeological sites (e.g. lithic scatter, etc.), and to verify vegetation management effects to sites
- If possible, talk to a technical counterpart (applicant staff) and a member of the grounds maintenance team to determine how they manage resources and avoid impacting historic and archaeological sites, and how they deal with inadvertent discovery of historic and archaeological material and human remains
- If necessary, schedule separate archaeology tour with plant personnel

Agency Meetings.

Objective is to obtain perspective of cultural resource management agencies regarding plant operation and impacts. Typically during the site audit, a meeting is scheduled with the State Historic Preservation Office (SHPO) to discuss the proposed action (license renewal), the APE, and to perform a site records search. If any Federally recognized Native American Tribes with aboriginal ties to the project area are local, a meeting with the THPO or equivalent tribal member would be appropriate depending on location. The Advisory Council on Historic Preservation is called in when there is a dispute between the NRC and the SHPO.

Additionally, meetings should be scheduled with local historians (museums) located near the project area.

- Discuss past consultations or involvement with applicant and plant.
- Discuss cumulative effects and other projects in region of influence that could interact with the plant under review.
- Discuss concerns regarding impacts of plant operations on cultural resources.

Health Physics/Radiological Impacts

AUDIT ACTIVITIES:

1. Be prepared to discuss any questions that you might have based upon the review of the ER, UFSAR, ODCM, and annual Effluent and Radiological Monitoring reports. The applicant will generally have personnel who are responsible for these reports available at the audit. Questions are much easier to formulate if you prepare preliminary versions of the health physics/radiological sections of the SEIS prior to the audit.

2. Inspect/review an off-site environmental monitoring station during the driving tour of the site.

3. Take the in-plant tour of major components of the radioactive waste management systems (gaseous, liquid, and solid), effluent monitoring systems, and all effluent release points. The primary purpose of the tour is to confirm (at a gross level) the process and equipment information provided in the ER and UFSAR and to aid in the interpretation of the monitoring results presented in the annual Effluent and Radiological Monitoring reports.

4. Obtain any documents that were requested of the Applicant prior to the audit

5. If previously arranged, meet with State agency representatives to discuss any radiological concerns during the renewal period that they might have

6. Review summaries of occupational radiation exposure for the plant for the last 5 years–overall numbers such as "106 person-rem for plant staff and contractors for 2004." Request additional information regarding cause of if the numbers for a given year are higher than about 200 person-rem.

Terrestrial Ecology

AUDIT ACTIVITIES: (should be coordinated with the hydrologist and aquatic ecologist to make sure that mutually inclusive information needs are obtained)

In-Plant Activities.

Objective is to obtain original reference material sited in ER, verify environmental compliance activities related to terrestrial ecology, and gain overview of site and issues.

- Review key references from ER especially survey reports
- Review aerial photographs of site and transmission line(s)
- Review topographic maps of site and transmission line(s)
- Review habitat/vegetation/land use maps of site and transmission line(s)
- Review maps showing locations of known T&E species occurrences
- Review raptor and bat reporting procedures and records for transmission line(s)
- Review any procedures required by ESA biological opinion for the facility.
- Understand the relationship between the applicant and the owner/operator of the transmission lines.
- Review best management practices for ground-disturbing activities
- Review environmental review procedure(s) used by site to evaluate changes to the facility.
- Review documentation for environmental reviews for recently completed projects
- Review documentation of consultation for T&E or wetland impacts
- Discuss procedures and resources with technical counterpart(s) at the plant
- Review new and significant information process and review performed by applicant
- Review applicant's transmission line vegetation management program plan, including timing of mowing, herbicide application, and clearing; inspections and repair activities conducted by helicopters or other vehicles; maintenance technician training programs or guidelines for applicant and any contractors; and any regulations which restrict maintenance activities (for instance state legislation restricting herbicide use in a portion of the corridor)
- Review any relevant reference material regarding studies conducted in reference to terrestrial issues at plant, including copies of any wildlife studies, plant surveys, and wildlife habitat certifications or applications
- Review lists of all herbicides, pesticides, or other chemicals used in the transmission corridor or around the plant, and the amount, location, and manner of application.
- Review lists of any bird strikes (including birds of prey and migratory birds) which have occurred in the transmission corridor or at the plant or cooling tower
- Review any documentation of how the applicant coordinates with state DNR and USFWS when carrying out maintenance activities at water, wetland, marsh, creek, or other critical habitat areas
- Review any monitoring reports, surveys, any pre-activity surveys conducted in the last 20 years
- Obtain names of any right-of-way contractors
- Review information on management around special species and in less developed areas of plant, for instance brush removal programs near endangered species
- Review or create a map of vegetation communities, (forest, wetland, scrub etc.)

- Review information regarding historic sightings of threatened endangered species around plant or transmission corridors, including individuals foraging, nesting, or passing through
- Review correspondence regarding T&E species with state and federal regulators
- Review location of sources of noise which could impact important species
- Review any reports to federal agencies on pertinent acts, including the Migratory Bird Treaty Act, or raptor mortalities.
- Review maps of ownership and land use on transmission lines and owner property
- Review estimated acreage of vegetation communities
- Review wildfire management plans
- Review data on number of migratory birds near area, including wintering waterfowl

General Site Tour.

Objective is to observe site conditions, verify descriptions in ER, and identify important impact pathways

- Visit T&E species locations or habitats, wetlands, riparian habitats, floodplains, important upland habitats, important plant features
- Verify vegetation community descriptions
- Tour all or portion of transmission line(s) to determine or verify vegetation management effects, types of habitat crossed, unauthorized use, possible effects at wetland or stream crossings
- Tour areas downwind of cooling tower for salt deposition damage and shading effects
- If possible, talk to member of grounds maintenance team who works in more natural areas, to determine how they manage resources and avoid impacting endangered species, and how they manage less developed areas (wildlife management in adjacent forests etc.)
- Participate in boat tour to view site, vegetation communities, wetlands, riparian areas.
- Tour site and transission lines to determine adequacy of applicant's program to control site runoff, erosion, and siltation.
- Examine waste management systems and possible pathway to impacts on terrestrial systems
- Identify invasive species problems especially those associated with site management or ground-disturbing activities (e.g., weed control, topsoil stockpiling, vegetation establishment)

Agency Meetings.

Objective is to obtain perspective of natural resource management agencies regarding plant operation and impacts. Agencies to meet typically include State Fish and Game Department, or equivalent, State Department of Environmental Protection, and U.S. Fish and Wildlife Service, but meeting with others (e.g., U.S. Army Corps of Engineers, U.S. Forest Service) could be appropriate depending on location.

- Discuss past consultations or involvement with applicant and plant
- Discuss cumulative effects and other projects in region of influence that could interact with the plant under review
- Discuss concerns regarding impacts of plant operations on resources

Alternatives

AUDIT ACTIVITIES:

1. Confirm if area needed for alternatives (including fuel and waste management) will be contained entirely on site.

2. Confirm that all area to be used for alternatives is previously disturbed, and if not, how much would be new disturbance.

3. Confirm on the feasibility of logistics (i.e., train tracks and gas lines for fossil fuel alternatives) for each proposed alternative.

4. Verify any documentation of analyses/studies on the feasibility of each proposed alternative.

5. Gather information on site-specific conservation, specifically what the applicant's existing conservation program entials; the likelihood for additional gains and the extent to which they've already taken credit for future gains in conservation.

Air Quality (Climate/Meteorology)

AUDIT ACTIVITIES:
(these should be coordinated with the plant meteorologist, regulatory permit engineer and general plant or safety engineer to make sure that mutually inclusive information needs are obtained)

In-Plant Activities.

Objective is to obtain original reference material cited in ER, verify environmental compliance activities related to air quality and gain overview of plant sites primary and ancillary facilities.

- Review aerial photographs of site and transmission line(s)
- Review topographic maps of site
- Discuss procedures, resources, and known issues or concerns with technical counterpart(s) at the plant
- Develop a list of documents that you need copies of for subsequent analyses following the site audit
- Review any air permits for stationary air emission sources
- Review information about any aircraft used at or by the site and transmission lines
- Get summary of air emissions data from stationary sources, to determine annual emissions over previous cycles
- Gather any applicable general weather data, including temperature, precipitation, both rain and snowfall, tornado probability, wind energy potential, etc.
- Find the references used to determine tornado frequency information used in the ER
- Procure recent meteorological reports for site
- List of existing, pending, submitted, or anticipated permits for operations, construction, or other activities associated with the site or transmission line corridors.
- Develop information on non-permitted air pollution sources
- Review any records regarding air permit compliance status and violations
- Review information regarding the distances to nearest residential, commercial, or recreational receptors in each direction, and any special meteorological factors that may impact transport of air emissions to these receptors
- Review the wind rose for the facility, representing patterns of wind speed and direction. (If available, from the site meteorological tower, and from the nearest representative meteorological tower.)
- Review descriptions of the cooling system and relevant components for use in determining potential impacts of heat dissipation on the atmosphere.
- Review descriptions of potential release points for radioactive effluents for use in atmospheric transport and diffusion calculation.
- Review descriptions of non-radiological emission to the atmosphere for evaluation of the impacts of plant construction and operation on air quality (include emissions from vehicles).
- Make contact with site atmospheric scientist/meteorologist

General Site Tour.

Objective is to observe site terrain features relevant to influences on winds and air dispersion patterns.

- Visit relevant site locations (e.g., meteorological tower and data logger facility, air-sampling locations, emergency fire pump house, cooling tower) and be prepared to ask questions to your plant personal contacts about measurement and facility operations.

- Be prepared to discuss any questions that you might have based upon the review of the requested documents/information and the relevant data gaps identified in your preliminary draft SEIS section. The applicant will generally have personnel who are responsible for these reports available at the audit. Some identified data gaps (e.g., climate type, tornado strike probabilities) will need to be filled through discipline specific literature/Web site search reviews and references.
- Participate in requested facility tours.
- Participate in public scoping meeting, if requested by NRC.
- Obtain any documents that were requested of the Applicant prior to the audit. Those documents that you deem as necessary to directly cite or take off-site should be identified with the PTL so they can be cataloged for distribution and docketing.

Aquatic Ecology

AUDIT ACTIVITIES: (these should be coordinated with the hydrologist and terrestrial ecologist to make sure that mutually inclusive information needs are obtained):

In-Plant Activities.
Objective is to obtain original reference material cited in ER, verify environmental compliance activities related to aquatic ecology, and gain overview of site and issues.

- Review key references from ER especially initial surveys and the 316a and 316b EPA Phase II related studies, demonstration reports, and impingement and entrainment study reports.
- Review aerial photographs of site and transmission line(s).
- Review topographic maps of site and transmission line(s), in part to make sure that a listing of all water bodies crossed by the line(s) are obtained.
- Review maps showing locations of known T&E species occurrences.
- Review vegetation management procedures on aquatic resources for site and associated transmission line(s) including special procedures for stream and river crossings.
- Review documentation for environmental reviews for recently completed projects.
- Review documentation of ESA consultation for listed species.
- Discuss procedures, resources, and known issues or concerns with technical counterpart(s) at the plant.
- Develop a list of documents that you need copies of for subsequent analyses following the site audit.
- Review correspondence with any federal or state government agency regarding state and federally listed threatened and endangered species.
- Review reports regarding thermal shock events.
- Review any aquatic surveys performed about affected water bodies or the plants effects on aquatic systems.
- Review any reported fish kills associated with plant operation.
- Review any studies or information regarding shellfish populations near the site.
- Review information on any training programs related to mitigating thermal impacts or to rescue stranded animals.
- Review information on any effects of withdrawal from water bodies, including effect on flow and ecology.
- Review information on any water quality monitoring systems and procedures.
- Review any water quality data at the end of the zone of initial dilution (ZID) at the downstream end of the ZID.
- Review information on any biocides or other chemicals used which may enter water bodies their location, amount, and the manner of application.
- Review information on dredging activities and copies of applicable permits.
- Review copy of current NPDES permit, correspondence, applications, and monitoring plans, and any violations within the previous 5 years.
- Review federal- and state-created wetland maps.
- Review information regarding nearby spawning or nursery areas.
- Review any studies on existing, proposed, or alternate cooling systems.
- Review any applications for any related projects which may affect water quality.
- Review any impingement/entrainment studies and/or data .
- Review site hydrology information.
- Review information regarding local water-quality areas.

- Review impacts caused by the flow field induced by the intake system.
- Review the design and operation of any screen wash and fish return system.
- Review any proposed construction, terrain modification, or dredging operations.
- Map any important aquatic habitats of the site and vicinity.
- Talk to staff knowledgeable about monitoring and compliance activities.
- documentation of consultation with agencies responsible for permitting nonradioactive waste systems for atmospheric, liquid, or solid effluents (e.g., hazardous waste permit, recyling disposal, pollution prevention programs).

General Site Tour.
Objective is to observe site conditions, verify descriptions in ER, and identify important impact pathways

- Visit listed species locations or habitats, important plant features (e.g., intake and discharge, trash racks, fish screens, on-site aquatic habitats).
- Tour any cooling ponds.
- Meet staff which are knowledgeable about ecology and species in cooling ponds or channels and management processes.
- Tour transmission line(s) to determine or verify appropriate vegetation management effects at stream crossings.
- Look for erosion on site and along transmission lines that may result in stream or water body siltation.
- Inquire about presence of T&E species on site, in adjacent water bodies, and in bodies crossed by transmission lines.
- Participate in boat tour to get a familiarity with the intake and discharge facilities; observe river, lake or ocean biotic sampling locations; and to get an overall perspective of the plant and water body used for the cooling system.
- Identify invasive species problems especially those associated with the cooling system (e.g., zebra mussels or Asiatic clams), observe system to test for and/or control these species.

Agency Meetings. Objective is to obtain perspective of natural resource management agencies regarding plant operation and impacts. Agencies to meet typically include State Department of Fish and Game (or equivalent), U.S. Fish and Wildlife Service, and, if marine or migratory species are of concern, the National Marine Fisheries Service; but other agencies or organizations (e.g., U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, and university and private research groups) can provide useful perspectives or information.

- Discuss past consultations or involvement with applicant and plant.
- Discuss cumulative effects and other projects in region of influence that could interact with the plant under review.
- Discuss concerns regarding impacts of plant operations on resources.
- Obtain contact information from the agency and plant personnel.

Hydrology

AUDIT ACTIVITIES:

1. Be prepared to discuss any questions that you might have based upon the review of the requested documents and information. The applicant will generally have personnel who are responsible for these reports available at the audit.

2. Conduct tour of facilities mentioned above.

3. Obtain any documents that were requested of the Applicant prior to the audit. For those that are necessary to directly cite or take off-site, ensure with PTL that these items are docketed.

4. If previously arranged, meet with State agency representatives to discuss any hydrological concerns during the renewal period that they might have.

5. Review documentation of consultation with agencies responsible for permitting nonradioactive waste systems for atmospheric, liquid, or solid effluents (e.g., hazardous waste permit, recycling disposal, pollution prevention (P2) programs).