



Crystal River Nuclear Plant
Docket No. 50-302
Operating License No. DPR-72

Ref: 10 CFR 54

November 5, 2009
3F1109-06

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: Crystal River Unit 3 – Response to Request for Additional Information Regarding the Review of the License Renewal Application for the Crystal River Unit 3 Nuclear Generating Plant (TAC NO. ME0278) – Revised Environmental Site Audit Needs List

References: (1) CR-3 to NRC letter, 3F1208-01, dated December 16, 2008, "Crystal River Unit 3 – Application for Renewal of Operating License"
(2) NRC to CR-3, letter dated October 6, 2009, "Request for Additional Information Regarding the Review of the License Renewal Application for the Crystal River Unit 3 Nuclear Generating Plant (TAC NO. ME0278)"

Dear Sir:

On December 16, 2008, Florida Power Corporation (FPC), doing business as Progress Energy Florida, Inc. (PEF), requested renewal of the operating license for Crystal River Unit 3 (CR-3) to extend the term of its operating license an additional 20 years beyond the current expiration date (Reference 1). Subsequently, the Nuclear Regulatory Commission (NRC), by letter dated October 6, 2009, provided a request for additional information (RAI) concerning the CR-3 License Renewal Application and a Revised Environmental Site Audit Needs List (Reference 2). The Enclosure to this letter provides the response to the Revised Environmental Site Audit Needs List. A response to the RAI is being provided by separate letter.

The Revised Environmental Site Audit Needs List requested additional information of two different types: (1) existing project or public documentation and (2) applicant-developed information normally subject to a formal request for additional information. This letter provides only the existing documentation; the other information may be the subject of a future NRC staff request, if required. The scope of this response was discussed with and agreed to by Ms. Elaine Keegan, the NRC Project Manager for the CR-3 License Renewal environmental review, on October 29, 2009.

No new regulatory commitments are contained in this submittal.

If you have any questions regarding this submittal, please contact Mr. Mike Heath, Supervisor, License Renewal, at (910) 457-3487, e-mail at mike.heath@pgnmail.com.

Sincerely,


Jon A. Franke
Vice President
Crystal River Unit 3

JAF/dwh

Enclosure: Response to the Revised Environmental Site Audit Needs List

xc: NRC CR-3 Project Manager
NRC License Renewal Project Manager
NRC Regional Administrator, Region II
Senior Resident Inspector

Progress Energy Florida, Inc.
Crystal River Nuclear Plant
15760 W. Power Line Street
Crystal River, FL 34428

A.140
NRR

PROGRESS ENERGY FLORIDA, INC.

CRYSTAL RIVER UNIT 3

DOCKET NUMBER 50 - 302 / LICENSE NUMBER DPR - 72

ENCLOSURE

**RESPONSE TO THE REVISED ENVIRONMENTAL
SITE AUDIT NEEDS LIST**

RESPONSE TO THE REVISED ENVIRONMENTAL SITE AUDIT NEEDS LIST

1. AIR, METEOROLOGY, CLIMATE (E. Lenning, NRC, R. Kolpa, ANL)

- A-1 Provide copies of relevant sections of the last five years of the Annual Operating Report submitted to the Florida Department of Environmental Protection (FL DEP) in accordance with Rule 62-210.370. Provide copies of all other permits (e.g., Prevention of Significant Deterioration [PSD] permit for the south cooling tower) issued by and correspondence with the FL DEP pertaining to air pollution sources associated with Unit #3 operations.

Documents Provided

1. Annual Operating Reports 2004 – 2008
2. Revised Technical Evaluation and Preliminary Determination; Draft Air Construction Permit No. PSD-FL-392
3. Draft Permit PSD-FL-392
4. Permit PSD-FL-392
5. South Cooling Tower Permit Application (Golder Associates)

- A-2 Provide details of stationary and mobile sources of criteria pollutants associated with the operation of CR-3 (including on-site spent fuel storage), including, as appropriate, horse power ratings, fuel consumption, pollution control equipment, operating records, and estimates of annual criteria pollutant releases.

The information package prepared for staff review during environmental site audit answered this item. Provide the information package including the items listed in the following Requested Documents list.

Documents Provided

Other Stationary Combustion Sources (Not Covered by continuous emissions monitoring systems - CEMS).

- A-3 Make available for review, records of preventative maintenance activities for emergency generators, back-up fire water and feedwater pumps, and other back-up or emergency diesel-fueled equipment for the last three years; confirm that all such stationary sources of air pollutant emissions are not regulated sources under the CR-3 Title V permit.

The information package prepared for staff review during environmental site audit answered this item. Provide the information package including the items listed in the following Requested Documents list.

Documents Provided

Preventive Maintenance (PM) Listing for:

1. Portable Power Independent Pump
2. Emergency Feedwater Pump Engine (EFP-3)
3. Emergency Diesel Generator Engine (EGDG-1A and EGDG-1B)
4. Alternate AC Diesel Generator Engine (EGDG-1C)
5. Fire Service Pump Engine (FSP-2A and 2B)

- A-4 Provide copies of procedures for meteorological instrument calibrations and for the collection, verification, and application of meteorological data to support operations.

The information package prepared for staff review during environmental site audit answered this item. Provide the information package including the items listed in the following Requested Documents list.

Documents Provided

1. PM-157B, Primary Meteorological System (Monthly)
2. SP-153, Primary System Meteorological Monitoring Instrumentation Calibration
3. SP-157A, Meteorological System Surveillance

- A-5 Provide procedures for maintenance of heating, ventilating, and air-conditioning (HVAC) equipment, including: management/inventory of refrigerants, characterization/management of filters, refrigerants, and pump oils for systems serving areas with potential airborne radioactivity.

The information package prepared for staff review during environmental site audit answered this item. Provide the information package including the items listed in the following Requested Documents list.

Documents Provided

1. CHHE-1A and CHHE-1B PM List
2. NGG-PMB-HAN-01, NGG Equipment Reliability Template, HVAC-Air Handling Equipment
3. CR-3 Air Conditioning Maintenance Log
4. PM-136A, Control Complex Chiller CHHE-1A
5. PM-136B, Control Complex Chiller CHHE-1B
6. CP-148, Ventilation Filter Testing Program
7. MP-106, HEPA, Charcoal Filter and Test Canister Removal and Replacement

- A-6 Provide estimates of drift loss from the helper cooling tower for CR-3, as well as details regarding the chemicals used (if any) to treat the water directed to the helper cooling towers; provide the average percentage of time that the helper cooling tower is operating.

The information package prepared for staff review during environmental site audit answered this item. Provide the information package including the items listed in the following Requested Documents list.

Documents Provided

None - Potential Request for Additional Information.

- A-7 Provide additional details regarding refurbishment activities planned for 74-day period beginning in September 2009 (replacement of steam generators), including: capacity and throughput of temporary on-site concrete batch plant, type, number, and expected operating schedules of supplemental construction vehicles and equipment used to support refurbishment activities, expected vehicle trips (trucks bringing materials and equipment, as well as vehicles of the refurbishment workforce) that will occur as a result of refurbishment, total area of

ground surface to be disturbed to support development of temporary laydown yards, material storage yards, and construction of new buildings/structures.

Documents Provided

Letter to Jonathan Holtom, Department of Environmental Protection/Division of Air Resource Management, dated April 7, 2009.

- A-8 Provide information on the status of the FL DEP permit for the south cooling tower (PSD-FL-392) and any operating reports submitted to date.

The information package prepared for staff review during environmental site audit answered this item. Provide the information package including the items listed in the following Requested Documents list.

Documents Provided

See A-1.

- A-9 Provide copies of all applicable Air permits (past 5 years) including open burning or fire permits if such activities take place at CR-3.

Documents Provided

1. Permit No. 0170004-010-AC
2. Permit No. 0170004-011-AV
3. Permit No. 0170004-018-AC

- A-10 List all emission sources and materials emitted, if air permit does not contain this information.

Documents Provided

None - Potential Request for Additional Information.

- A-11 How does CR-3 dispose and/or re-use burned diesel oil and lube oil?

Documents Provided

None - Potential Request for Additional Information.

- A-12 Are there any incinerators onsite?

Documents Provided

None - Potential Request for Additional Information.

- A-13 Provide the most current and updated description of the meteorological system/tower. Confirm elevations for new location of the meteorological tower.

Documents Provided

Design Basis Document for the Meteorological Measurement System (Revision 5 Mark-up).

- A-14 What are the total direct and indirect projected emissions from the CR-3 refurbishment project?

The information package prepared for staff review during environmental site audit answered this item. Provide the information package.

Documents Provided

Air Emissions Table from THE CR-3 Site Certification Application for Extended Power Uprate (EPU).

Requested Air, Meteorology, Climate Documents: In addition to the information and documents requested above, provide the following documents.

1. Design Basis Document for the Meteorological Measurement System, System Code: MM, Tab: 5/6, Issue Date 11/14/83, Revision 4

Documents Provided

See A-13.

2. FLDEP permit: Progress Energy Florida, Inc. Project No. 0170004-016-AC, Air Construction Permit PSD-FL-383, Units 4 and 5 Pollution Controls Project, Permit expires November 1, 2011

Documents Provided

As listed above.

3. FLDEP permit: Progress Energy Florida, Inc. Project No. 0170004-019-AC, Air Construction Permit PSD-FL-383, Units 4 and 5 Pollution Controls Project Revisions, Permit expires November 1, 2011

Documents Provided

As listed above.

4. FLDEP permit: Air Permit No. 0170004-017-AC, Expiration Date 07/01/2014, Crystal River Power Plant BART Project

Documents Provided

As listed above.

5. Calculations on Cooling Tower Data: Emissions, Operating Time for Helper cooling towers, modular cooling towers for the years 2004 through 2008, (includes 5b operating data capture) Developed by D. Meyer, Progress Energy

Documents Provided

None - Potential Request for Additional Information.

6. Provide the response to Site Audit Needs List A-6 Helper Cooling Towers Graph of Operation for the period 1/1/2007 through 7/19/2009, Prepared by Brandon Barr on 7/20/09

Documents Provided

None - Potential Request for Additional Information.

7. Provide the response to Site Audit Needs List A-6, Data regarding operating parameters for the South Cooling Tower (flow and drift rate) (no date)

Documents Provided

None - Potential Request for Additional Information.

8. Provide the response to Site Audit Needs List A-2; List of "Other Stationary Combustion Sources (Not Covered by CEMS), Reciprocating Internal Combustion Engines (RICE) (No date)

Documents Provided

See A-2.

9. Provide the response to Site Audit Needs List A-3, Maintenance Activities for Emergency Diesel Fueled Equipment (various) prepared by Brandon Barr, 7/18/2009

Documents Provided

See A-3.

10. Provide the response to Site Audit Needs List A-3, Maintenance Activities log for Portable Power Independent Pump

Documents Provided

See A-3.

11. Provide the response to Site Audit Needs List A-5, Maintenance Activities for Water Chiller CHHE-1A

Documents Provided

See A-5.

12. Provide the response to Site Audit Needs List A-5, Air Conditioning Maintenance Log, entries for the period 2/19/2009 through 7/16/2009

Documents Provided

See A-5.

13. Provide the response to Site Audit Needs List A-5 HVAC Maintenance Activities, Prepared by Brandon Barr, 7/20/2009

Documents Provided

See A-5.

14. Provide the response to Site Audit Needs List A-7, information regarding planned refurbishment of Unit 3, including request to Florida DEP for amendment to Title V permit to accommodate concrete batch plant dated April 7, 2009

Documents Provided

See A-7.

15. Provide the response to Site Audit Needs List A-8 regarding permit for south cooling tower; Permit PSD-FL-392

Documents Provided

See A-8.

16. Annual Operating Reports for Unit 3 sources for the period 2004-2008, compiled by D. Meyer

Documents Provided

See A-1.

17. Reisman, J. and G. Frisbie, Calculating Realistic PM10 Emissions from Cooling Towers, Greystone Environmental Consultants, Paper presented at an unspecified conference, used by Progress Energy to estimate PM10 emissions for the south cooling tower in the application to amend the Title V permit to accommodate the south cooling tower, submitted to FL DEP on 6/7/07

Documents Provided

See A-1.

18. FLDEP permit: Florida Power Corporation dba Progress Energy Florida, Inc. Title V Air Operation Permit Revision Final permit Number 0170004-015-AV, Effective Date May 29, 2006, Revision Effective Date February 14, 2007, Renewal Application Due Date July 5, 2009

Documents Provided

As listed above.

19. South Cooling Tower Permit Application (Golder Associates)

Documents Provided

See A-1.

20. FLDEP South Cooling tower Revised Technical Evaluation and Preliminary Determination, Oct 8, 2007

Documents Provided

See A-1.

2. AQUATIC ECOLOGY (D. Logan, NRC; W. Vinikour, ANL)

- AQ-1 Provide a copy of the responses received from the United States Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), and Florida Wildlife Conservation (FWC) regarding listed species and sensitive habitats in the area of CR-3 or along the CR-3 associated transmission lines. (ER Section 2.5, page 2-14)

Documents Provided

US Fish and Wildlife Service, FWS Log No. 41910-I-0015, October 28, 2008.

- AQ-2 It was mentioned that an environmental evaluation of the extended power uprate would be performed in mid-2009. What is the status of that review and when will documentation of that review be available? (ER Section 2.12.1, page 2-46)

Documents Provided

None - Potential Request for Additional Information.

- AQ-3 Provide a copy of the following ER Chapter 2 references: FDEP (2002); FNAI (2008a); FNAI (2008c); NMFS (2002); Progress Energy (undated); and SWEC (1985).

Documents Provided

References as listed above.

- AQ-4 How often is dredging conducted in the intake and discharge canals? (ER Section 3.1.2, page 3-3). Please provide a description of the dredging process and the ultimate fate of the dredged materials.

Documents Provided

- 1. Jacksonville District Corps of Engineers Letter dated November 12, 2008.*
- 2. Florida Department of Environmental Protection (FDEP) letter dated May 29, 2008.*

- AQ-5 Answered during environmental site audit, no further information is requested.

- AQ-6 Provide a copy of any reports that provide information on entrainment and impingement for Unit 1 and Unit 2.

Documents Provided

Final Report Crystal River 316 Studies.

- AQ-7 Answered during environmental site audit, no further information is requested.

- AQ-8 Describe the method in which the discharge from Units 1 through 3 is used for cooling tower makeup for Units 4 and 5. Also, what is the quantity of makeup required for Units 4 and 5? (ER Section 3.1.2, page 3-4)

Documents Provided

- 1. Thermal Discharge Locations*
- 2. Crystal River North (CRN) Flow Data – D074 – D075*
- 3. CRN Makeup Blowdown Locations*

- AQ-9 Answered during environmental site audit, no further information is requested.

- AQ-10 The ER states that the 67 modular cooling towers should allow Units 1 and 2 to operate without reducing power. Has this actually been found to be the case? (ER Section 3.1.2, page 3-4)

Documents Provided

1. Excerpt from CR-3 procedure OP-CWB-4: Sections 2.2, 2.2.1 and 2.2.2.
2. CR-1& 2 Number of Events due to Point of Discharge (POD) Limits
3. CR-1& 2 Equivalent Derated Hours Due to POD Limits
4. CR-1& 2 Equivalent Derated MW-Hours Due to POD Limits

AQ-11 Answered during environmental site audit, no further information is requested.

AQ-12 Provide a copy of the following ER Chapter 3 references: Florida Power (2005); Golder Associates (2006).

Documents Provided

1. Florida Power (2005), Final Safety Analysis Report (FSAR) Chapter 8, Electrical Systems
2. Golder Associates (2006), Crystal River Energy Complex Proposal for Information Collection NPDES Permit No. FL0000159

AQ-13 Answered during environmental site audit, no further information is requested.

AQ-14 Provide a copy of the Environmental Protection Agency (EPA) report (or letter) that concluded that entrainment and impingement losses (presented in the 316 Demonstration submitted in 1985) were unacceptable and any follow-up letters between Progress Energy and both State and Federal Agencies regarding 316(a) and 316(b) issues. (ER Section 4.2, page 4-7)

Documents Provided

None - Potential Request for Additional Information.

AQ-15 What was the cooling water withdrawal rate prior to those established in the September 1988 National Pollutant Discharge Elimination System (NPDES) permit? (ER Section 4.2, page 4-7).

Documents Provided

See AQ-6.

AQ-16 Why are data not available for the Mariculture Center more recently than 2004? (ER Section 4.2, page 4-8)

Documents Provided

None - Potential Request for Additional Information.

AQ-17 Provide a copy of the "Fact Sheet" for the current NPDES permit. (ER Section 4.4, page 4-11) Also, if available, provide figures that show the thermal plume at different times of the year for the Units 1 through 3 discharge (e.g., from the point of discharge to ambient Crystal Bay temperatures). As practicable, areas of various ΔT s (e.g., every 3 to 5 degrees above ambient) should be provided.

Documents Provided

1. Crystal River South (CRS) Fact Sheet Amendment
2. NPDES Permit Fact Sheet – CR 1,2,3

- AQ-18 Provide a copy of the following ER Chapter 4 references: FWC (undated); Progress Energy (2004); Progress Energy (2005); all other annual reports pertaining to Mariculture Center [e.g., those prior to Progress Energy (2004) and any prepared following Progress Energy (2005)].

Documents Provided

1. *Florida Fish and Wildlife Conservation Commission (FWC) (undated)*
2. *Progress Energy (2004)*
3. *Progress Energy (2005)*

- AQ-19 Provide a figure that shows the monitoring point sample locations for the NPDES permit.

Documents Provided

1. *Crystal River Units 1, 2, 3 NPDES Flow Diagram – FL0000159*
2. *NPDES Water Outfalls – Permit No. FL0000159*
3. *Crystal River Units 1, 2, 3 NPDES Discharge Outfalls – FL0000159*

- AQ-20 Provide a copy of Progress Energy's Manatee Protection Plan. (ER Appendix F, page F-9)

Documents Provided

As listed above.

- AQ-21 Provide information of sea turtle strandings on the trash racks for Units 1 and 2.

Documents Provided

Crystal River Energy Complex (CREC) Sea Turtle Stranding Database Report

- AQ-22 Provide a copy of Progress Energy's Sea Turtle Rescue and Handling Guidance. (ER Appendix F, page F-10)

Documents Provided

CR-3 Administrative Instruction AI-571, Sea Turtle Rescue and Handling Guidance.

- AQ-24 Provide a copy of the PSD permit for the proposed South Cooling Tower that would be constructed and used in association with the CR-3 uprate.

Documents Provided

See A-1.

- AQ-25 Provide an update on the design and location of the South Cooling Tower.

Documents Provided

Drawing 2943004-MD-001, CREC Helper Cooling Tower South Overall Site Plan.

- AQ-26 Answered during environmental site audit, no further information is requested.

- AQ-27 Answered during environmental site audit, no further information is requested.

- AQ-28 Answered during environmental site audit, no further information is requested.

AQ-29 Answered during environmental site audit, no further information is requested.

AQ-30 Answered during environmental site audit, no further information is requested.

AQ-31 What is the intake channel water velocity?

Documents Provided

1. *Gilbert Associates, Inc., Report No. 1702, Circulation Water System Study*
2. *Hydraulic Design Review, Nuclear Services Seawater System, Crystal River, Unit No. 3*

AQ-32 What is the water velocity across the traveling screens?

Documents Provided

Alden, Summary of Plant Operations and Intake Equipment.

AQ-33 Answered during environmental site audit, no further information is requested.

Requested Aquatic Documents - Provide the following references which are cited in the Environmental Report (ER).

ER Chapter 2

1. Department of Environmental Protection, DEP Permit Nos. FL0000159 (Units 1, 2, and 3) and FL0036366 (Units 4 and 5), Citrus County. (FDEP 2002)

Documents Provided

See AQ-3.

2. Florida Natural Areas Inventory, Project: Central Florida, April 17, 2008 (FNAI 2008(a))

Documents Provided

See AQ-3.

3. Florida Natural Areas Inventory, Project: Lake Tarpon, April 17, 2008 (FNAI 2008(c))

Documents Provided

See AQ-3.

4. Article: The Red-Cockaded Woodpecker: Notes on Life History and Management. March 1980. (Hooper, et. al. 1980) Request for Information on Groundwater, July 26, 2006 (Johnson 2006)

Documents Provided

As listed above.

5. Progress Energy Crystal River Unit 3 Plant Operating Manual, AI-571, Sea Turtle Rescue and Handling Guidance (Progress Energy undated)

Documents Provided

See AQ-3.

6. Final Report Crystal River 316 Studies, January 15, 1985 (SWEC, 1985)

Documents Provided

See AQ-3.

7. Calculation Package for Population Density and Environmental Justice, included in ER Section 2.6 Regional Demograph, August 17, 2006 (TtNUS 2006)

Documents Provided

As listed above.

ER Chapter 3

1. Crystal River Energy Complex Proposal for Information Collection, NPDES Permit No. FL0000159, (Golden Associates 2006)

Documents Provided

See AQ-12.

ER Chapter 4

1. Crystal River Mariculture Center – Fish and Wildlife Research Institute (FWC undated)

Documents Provided

See AQ-18.

2. Progress Energy Corp. Crystal River Mariculture Center 2003 Annual Report, March 22, 2004 (Progress Energy 2004)

Documents Provided

See AQ-18.

3. Progress Energy Corp. Crystal River Mariculture Center 2004 Annual Report, March 29, 2005 (Progress Energy 2005)

Documents Provided

See AQ-18.

ARCHAEOLOGY (J. Davis, NRC; K. Wescott, ANL)

- AR-1 Provide a map detailing the level of ground disturbance at the plant, including documentation on how this level of disturbance was determined. Has this understanding of the level of disturbance been coordinated with the Florida State Historic Preservation Officer (FL SHPO)? In other words is the FL SHPO in agreement that these portions of the plant have been disturbed sufficiently as to preclude the possibility of any significant archaeological resources, including burials, existing in these areas?

Documents Provided

1. *Crystal River Complex (CRC) Developed Area Map*
2. *CRC Disturbed Area Map*

- AR-2 Answered during environmental site audit, no further information is requested.

- AR-3 Provide USGS 7.5 minute Quadrangle maps for plant site and transmission lines.

Documents Provided

Topographic maps of Plant Site and Transmission Lines (15 Sheets).

- AR-4 Answered during environmental site audit, no further information is requested.

- AR-5 Answered during environmental site audit, no further information is requested.

- AR-6 Provide a copy of the Environmental Compliance Manual and any other environmental review procedures for land-disturbing activities (e.g., trenching, clearing, digging).

Documents Provided

1. *EVC-CRNF-00002, Crystal River Nuclear Plant Site-Specific Environmental Policies, Permits, Registrations, Certifications and Plans*
2. *EVC-SUBS-00022, Land Disturbing Activities*

- AR-7 Answered during environmental site audit, no further information is requested.

- AR-8 Answered during environmental site audit, no further information is requested.

- AR-9 Answered during environmental site audit, no further information is requested.

- AR-10 Provide the historic and archaeological references presented in the ER, especially survey reports (e.g., Miller 1973).

Documents Provided

Included with Requested Archaeology References.

- AR-11 Answered during environmental site audit, no further information is requested.

Requested Archaeology References:

- 1 Miller 1973 "An Archaeological Survey of the Florida Power Corporation Crystal River Tract, Citrus County, Florida" by the Bureau of Historic Sites and Properties, Division of Archives, Historical Records Management, Florida Department of State., June.

Documents Provided
As listed above.

- 2 New South Associates 2006 "Cultural Resources Background Research Supporting License Renewal Crystal River Nuclear Plant Citrus and Levy Counties, Florida" submitted to Tetra Tech, Aiken, S.C. by New South Associates, St. Augustine, FL, Dec.

Documents Provided
As listed above.

- 3 MacRae 1993 "Citrus County Historical Notes" by Mary Isabel MacRae, Citrus County Historical Society, Inc, Inverness, FL.

Documents Provided
As listed above.

3. ENVIRONMENTAL JUSTICE (J. Rikhoff, NRC; W. Metz, ANL)

EJ -1 In order to address the provisions of Section 4-4, "Subsistence Consumption of Fish and Wildlife," in Executive Order 12898, provide the following information:

1. Information about any observed subsistence consumption behavior patterns—specifically fish and wildlife consumption—by minority and low-income populations in the vicinity of CR-3. This subsistence consumption behavior could consist of hunting, fishing, and trapping of game animals and any other general food gathering activities (e.g., collecting nuts, berries, and other plant material) conducted by minority and low-income individuals in the vicinity of CR-3.

Documents Provided
None - Potential Request for Additional Information.

2. Information about current or past wildlife sampling and testing of game animals such as deer, squirrel, turkey, pheasant, duck, fish and other game birds and animals that may have been conducted in the vicinity of CR-3. Wildlife sampling and testing may have been conducted before, during, and after plant construction and in the early days of plant operation, but was discontinued after determining that tissue samples consistently showed no significant or measurable radiological impact on the environment from plant operations.

Documents Provided
None - Potential Request for Additional Information.

4. HYDROLOGY (D. Beissel, NRC; T. Patton, ANL)

- H-1 Provide specific information on groundwater wells (PW-1 through PW-7, and PW-1A/B and any others), including locations, depths, and yields. This information should be detailed in Johnson, R., 2006, Response to Request for Information on Groundwater, email to Jan S. Kozyra (Progress Energy), July 26 (cited in ER Section 2.3).

Documents Provided

1. *Figure 2, Progress Energy Crystal River North Plant Wellfield Layout*
2. *Annotated photograph Consumptive Use Wells PW1A and PW1B, PW3, PW4, and PW5*

- H-2 Provide permits for all on-site wells (including those that are currently inactive and monitoring wells) and monitoring reports for the past 5 years.

Documents Provided

Industrial Wastewater Treatment Facility Permit No. FLA016960.

- H-3 Provide permits for all surface discharges, including surface impoundments, and monitoring reports for the past 5 years. Include the stormwater management plan, if available.

Documents Provided

1. *Industrial Wastewater Treatment Facility Permit No. FLA016960*
2. *Annual Groundwater Cumulative Summaries 2004 – 2009*
3. *Wastewater Maps and Flows*
4. *Storm Water Pollution and Best Management Practices Plan*
5. *Waste Water Permit*

- H-4 Provide the complete NPDES permit (No. FL0000159), including maps showing outfalls, monitoring locations, and other relevant site features. The parts of the permit provided in Appendix B of the ER address some discharge parameter limits, but do not include thermal discharge limits. Latitudes and longitudes of outfall locations are provided, but there are no maps. There's also no information on intake flow limits.

Documents Provided

1. *NPDES Permit*
2. *See Maps Provided in Response to H-3*
3. *Conditions of Certification*

- H-5 Provide discharge monitoring reports submitted to the state as required by the NPDES permit for the past 5 years.

Documents Provided

1. *Crystal River Nuclear Discharge Monitoring Report (DMR) Data, Permit No. FL00000159*
2. *Crystal River South DMR Data, Permit No. FL0000159*

- H-6 From the past 5 years, provide any release notifications, violation information (NOVs), or remediation documentation associated with surface water discharges, septic or sewage systems, groundwater or soil contamination (including spills, leaks, and other releases of fuel solvents, or other chemicals).

Documents Provided
Crystal River Incident Log Sheet.

- H-7 Provide any reports on Clean Water Act 316(a) demonstration studies in support of thermal limits set in the NPDES permit (or variances applied for – e.g., has a variance been applied for the increased thermal output associated with the extended power uprate to occur in the fall of 2009?). Please include information (as cited on p. 2-47, line 3, of the ER) regarding how higher discharge temperatures would be mitigated.

Documents Provided
See AQ-3.

- H-8 Provide any environmental site assessments conducted onsite since the CR-3 was built.

Documents Provided
Groundwater Flow Study Report.

- H-9 Please also provide the following documents cited in the ER:

1. SWEC, 1985, Final Report: Crystal River 316 Studies, prepared for Florida Power Corporation, Jan. 15.
2. Florida Power, 2005, Crystal River Unit 3 Final Safety Analysis Report, Rev. 29, Aug.

Documents Provided
1. A copy of reference Stone & Webster Engineering Corporation, SWEC, 1985 is provided in the response to AQ-3.
2. A copy of the FSAR was submitted with the application.

Requested Hydrology References: Provide the following documents.

1. Thermal Plan of Study; submitted to the Florida DEP in August 2007.

Documents Provided
As listed above.

2. Tritium Study for CR-3 that describes the tritium monitoring wells (depths, locations etc.). Also the Groundwater Flow Study (by EnHydrol, LLC 2007) done in support of the Tritium Study.

Documents Provided
See H-8.

3. Stormwater Pollution Prevention Plan (recently revised) and Stormwater Management Plan.

Documents Provided
See H-3.

4. Consumptive Water Use Permit; with Florida SW Water Management District. Also, most recent analytical data on groundwater from the potable wells done for the permit.

Documents Provided
As listed above.

5. Documentation for potable wells (PW1 through PW9) providing completion data (depth, yield, casing depth, etc.) and maps showing location relative to plant; also provide well logs if available (and for process water wells 1A and 1B).

Documents Provided
Production Well Data (See H-1 for the well location map).

6. Plans for installation of piezometers near potable wells that will monitor effects to nearby wetlands.

Documents Provided
Environmental Management Plan.

7. Industrial Wastewater Permit (#FLA016960) for discharges to percolation ponds, filed in 2007. Please also provide completion data and maps for monitoring wells for this program.

Documents Provided
See H-3.

8. Quarterly NPDES, IWW, DWW monitoring reports (for past 5 years) with cover letters to the Florida DEP.

Documents Provided
Water Monitoring Reports (16 Spreadsheets).

9. Brief description of the thermal model (and process parameters) used to predict temperatures at the POD station. A simple description is fine (we will not be evaluating the model) – we would like to show how the plant predicts temperatures so it can respond quickly to potential exceedences.

Documents Provided
Crystal River South POD Temperature Model.

10. Latest Dredging Permit with Army Corps and letter of permission from the Florida DEP.

Documents Provided

1. Army Corp of Engineers Dredging Permit
2. FDEP letter dated May 29, 2008

11. Domestic Wastewater Permits for north and south treatment plants. Please also provide completion data and maps for monitoring wells for this program (FLA118753 covers Units 1, 2, and 3; but please also provide the other one).

Documents Provided

1. Permit Number FLA118753
2. Permit Number FLA011862

12. Any plans related to current outage – in terms of increased water usage and wastewater discharge.

Documents Provided

None - Potential Request for Additional Information.

13. NPDES permit modifications for changes related to the power uprate, new tower discharge and discharge related to the Levy plant (when available); and the application for NPDES renewal to be submitted in Nov. 2009 (when available).

Documents Provided

1. NPDES Permit Modification
2. NPDES Permit Application – New Industrial Discharge

14. Documentation of the sampling protocols for the NPDES monitoring (would this be in the permit application?) – e.g., descriptions of stratified thermal monitoring.

Documents Provided

EOP-POD-26, Emergency Operating Procedure NPDES.

15. Incident log sheets reporting spills and other releases for the past 5 years.

Documents Provided

Incident Log Sheets (25 documents)

16. Environmental Resource Permits – covering the laydown/staging area for the steam generator construction and other aspects of CR-3 not covered by (i.e., outside of the certified boundary) the Conditions of Site Certification (2008).

Documents Provided

Construction Laydown Area Permits (2 documents).

5. NON-RADIOLOGICAL WASTE (E. Lenning, NRC)

NRW-1 Provide a description of all non-radioactive (hazardous and non-hazardous) waste streams and applicable procedures at CR-3, including types and quantities.

Documents Provided

1. Description of hazardous and non-hazardous waste, 2 pages
2. AI-1820, Hazardous and Non-Hazardous Waste Management
3. SP-909, Inspection of CR-3 Hazardous & Mixed Waste Satellite Accumulation Areas and Containers

NRW-2 Provide a description of the CR-3 wastewater streams and onsite sanitary waste treatment facility.

Documents Provided

1. CRS Waste Water Treatment Plant, Figure 1
2. Evaporator Condensate Storage Tank Waste Stream
3. Attachment C – Waste Water Flow, Crystal River Energy complex, Renewal of Industrial Waste Water Permit FLA016969
4. Laundry Shower Sump Tank Waste Stream
5. Regeneration Waste Neutralization Tank (SDT-1) Waste Stream
6. Drawing CRI-M307-D, Florida Power Corporation Sewage Treatment Project, Sewage Plant Block Diagram
7. Wastewater Permit Application Form 2A For Domestic Wastewater Facilities

NRW-3 Provide a description of applicable procedures of sludge disposal.

Documents Provided

CH-400, Nuclear Chemistry Master Scheduling Program

NRW-4 Provide copies of all applicable non-radioactive waste permits.

Documents Provided

No documents provided.

NRW-5 Provide copies of the Section 312 (TIER II) annual reports to EPA with a list of hazardous and toxic chemicals.

Documents Provided

2008 Tier II Chemical Inventory Reports.

NRW-6 Does CRS-3 produce any low-level mixed wastes?

Documents Provided

None - Potential Request for Additional Information.

NRW-7 Provide details of characterization and disposition of used oils generated in relation to the operation of CR-3, including used oil removed from dedicated emergency/back-up engines and oils recovered from HVAC vacuum pumps.

Documents Provided

None - Potential Request for Additional Information.

NRW-8 Provide a description of any waste minimization measures used at CR-3. If annual or quarterly recycling reports are available, please provide copies.

Documents Provided

CR-3 Pollution Prevention (P2) Accomplishments (5/2008).

NRW-9 Does CR-3 produce any medical wastes? If so, please specify quantity and how the disposal of medical wastes is handled.

Documents Provided

None - Potential Request for Additional Information.

6. RADIATION PROTECTION (S. Klementowicz)

RP-1 Provide a description of the radiological groundwater protection program.

Documents Provided

CR-3 Off-Site Dose Calculation Manual, Rev. 32.

RP-2 Provide information on any abnormal, unusual spills or leaks documented in accordance with 10 CFR 50.75(g) and/or any Nuclear Energy Institute Groundwater Protection Initiative reports to State and/or Local government.

Documents Provided

None - Potential Request for Additional Information.

RP-3 Provide information on any on-site disposal (10 CFR 20.2002) of radioactive material.

Documents Provided

None - Potential Request for Additional Information.

RP-4 Provide a description of plans for the long-term on-site storage of low-level radioactive waste (i.e. B and C Class waste).

Documents Provided

None - Potential Request for Additional Information.

7. SOCIOECONOMICS (J. Rikhoff, NRC; W. Metz, ANL)

- S-1 Confirm that data for 2005, 2006 and 2007 in ER Table 2-4 labeled, "Citrus County Tax Revenues," (the second column) is actually data for Citrus County PROPERTY tax revenues (i.e., versus total tax revenues).

Documents Provided

None - Potential Request for Additional Information.

- S-2 If available, provide 2008 data on the total property tax revenues in Citrus County, and total property taxes paid by CR-3 in Citrus County (i.e., an update of ER Table 2-4)

Documents Provided

Taxes Paid 2005 – 2008 (6 Pages).

- S-3 Provide the distribution of CR-3 local property taxes to the various jurisdictions in Citrus County listed in paragraph 2, pages 2-29.

Documents Provided

None - Potential Request for Additional Information.

- S-4 If available, provide recent information on the total number of CR-3 permanent (employed for more than one year), on-site employees and the residential distribution of permanent, on-site employees by county.

Documents Provided

None - Potential Request for Additional Information.

- S-5 In addition to property tax payment information presented in Section 2.7 of the ER, describe any other major annual support payments, one-time payments, and other forms of non-tax compensation (if any) provided to local organizations, communities, and jurisdictions (e.g., county, municipality, townships, villages, incorporated places, and school districts) on behalf of CR-3.

Documents Provided

2008 Contributions in Citrus County (6 Pages).

- S-6 Provide information about any changes in assessed property value or any other recent or anticipated payment adjustments that could result in notable increases or decreases in tax or other payments.

Documents Provided

None - Potential Request for Additional Information.

- S-7 Provide information on any studies that have quantified, or considered, the impact of noise from CR-3 facilities at various offsite locations.

Documents Provided

Site Certification Application, Crystal River Unit 3 Uprate Project, Crystal River Florida, June 2007 (Excerpts, 15 pages).

- S-8 Provide data on the height of stacks, cooling towers, and other plant buildings, and the visibility of plant facilities and cooling tower plumes from various off-site locations.

Documents Provided

None - Potential Request for Additional Information.

8. TERRESTRIAL ECOLOGY (R. Bulanevitz, NRC; K. LaGory, ANL)

- T-1 Provide a map of the CR-3 site that delineates developed areas, previously disturbed areas, and undeveloped terrestrial, wetland, and aquatic habitats (pages 2-11 of the ER). Provide a table or spreadsheet that presents the area covered by each habitat.

Documents Provided

See AR-1.

- T-2 Answered during environmental site audit, no further information is requested.

- T-3 Answered during environmental site audit, no further information is requested.

- T-4 Answered during environmental site audit, no further information is requested.

- T-5 Answered during environmental site audit, no further information is requested.

- T-6 Answered during environmental site audit, no further information is requested.

- T-7 If available, provide any survey information for threatened and endangered species conducted on the CR-3 site or along associated transmission lines (pages 2-14 of the ER). This will also provide the answer to T-13 and T-22.

Documents Provided

Environmental Support Document, Crystal River Unit 3, South Cooling Tower Laydown Area, Citrus County Florida, May 2009.

- T-8 Answered during environmental site audit, no further information is requested.

- T-9 Provide information on Florida scrub jay use of transmission lines including a map of the areas that contain potentially suitable habitat and locations where scrub jays have been seen (pages 2-17 of the ER).

Documents Provided

Florida Scrub Jay Observations Map.

- T-10 Provide information on wood stork use of the site including a map of the areas used (pages 2-18 of the ER).

Documents Provided

- 1. CR123 Percolation Ponds*
- 2. Florida Wood Stork Colonies Core Foraging Areas*

- T-11 Answered during environmental site audit, no further information is requested.
- T-12 Provide information on gopher tortoise use of transmission lines including a map of the areas that contain potentially suitable habitat and locations where tortoises have been seen (pages 2-21 of ER).

Documents Provided

Gopher Tortoise Observations Map.

- T-14 Provide a description of vegetation management procedures for transmission line corridors including procedures for wetland, aquatic, and other sensitive areas; threatened and endangered species locations and habitats (pages 3-5 and 3-6 of the ER).

Documents Provided

1. *Procedure MNT-TRMX-00176, Transmission Vegetation Management Program*
2. *Procedure MNT-TRMX-00193, TVM Program: Off Row Tree Cutting Guidelines*
3. *Progress Energy Florida General Guidelines for Herbicide Applications on Transmission Rights of Way*
4. *Progress Energy Florida General Guidelines for Vegetation Maintenance/RE-Clearing of Transmission Rights of Way*
5. *MNT-TRMX-00000, Transmission Maintenance Program Policy*

- T-15 Answered during environmental site audit, no further information is requested.
- T-16 Answered during environmental site audit, no further information is requested.
- T-17 Provide information on the potential effects of cooling tower drift on terrestrial vegetation of the CR-3 site (page A-4). Has deposition of particulates (salt drift) from cooling tower plumes resulted in any damage to vegetation or increased salinity of soils?

Documents Provided

None - Potential Request for Additional Information.

- T-18 Answered during environmental site audit, no further information is requested.
- T-19 Answered during environmental site audit, no further information is requested.
- T-20 Provide copies of all correspondence with the USFWS, NMFS, and the state of Florida regarding threatened and endangered species including responses from those agencies if available (Appendix C of the ER).

Documents Provided

See AQ-1.

- T-21 Answered during environmental site audit, no further information is requested.