

March 21, 2008

MEMORANDUM TO: Richard Raione, Chief  
Environmental Projects Branch 2  
Division of Site and Environmental Reviews  
Office of New Reactors

FROM: H. Brent Clayton, Chief **/RA/**  
Environmental Technical Support Branch  
Division of Site and Environmental Reviews  
Office of New Reactors

SUBJECT: TRIP REPORT – JANUARY 7-8, 2008, READINESS  
ASSESSMENT (C-2) VISIT FOR A COMBINED  
LICENSE APPLICATION AT THE LEVY COUNTY SITE

This report summarizes the staff's January 7 and 8, 2008, pre-application/readiness assessment (C-2) visit related to the environmental portion of a future combined license (COL) application for the Levy County, Florida site. Progress Energy of Florida (PEF) has indicated its intent to submit a COL application for this site. Progress Energy selected the Westinghouse Corporation's advanced pressurized water reactor, or AP-1000, design for the proposed new nuclear station.

The purpose of this visit was to assess the applicant's readiness and its progress toward submitting a COL application; focusing on the process used by PEF to select the site. The visit took place at the PEF offices in Raleigh, North Carolina. Enclosure 1 provides a list of attendees. Enclosure 2 is the agenda used during the visit. Enclosure 3 is a summary of the more significant issues that were discussed. Note that this assessment was conducted several months prior to the applicant's planned COL application date and the staff did not expect the environmental report to be fully developed at this stage. Furthermore, the applicant was aware of, and informed the NRC staff of many of the issues described in Enclosure 3. In summary, the staff did not identify any issues related to the environmental report that would indicate it would not be ready by the planned date of application. However, this was not a formal or comprehensive staff review and additional issues could be identified during the staff's formal review after the application is submitted.

The staff is planning a C-3 readiness assessment visit for May 2008. The public outreach meeting is not yet scheduled.

Project No.: 756

Enclosures: As stated

Contact: Andrew Kugler, NRO/DSER/RAP2  
301-415-2828

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DISTRIBUTION: See next page

**ADAMS Accession No.: ML080460443**

OFFICE	PM:DSER:RAP2:NRO	LA:DSER:RAP2:NRO	BC:DSER:RENV:NRO
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DATE	03/05/08	03/07/08	03/21/08

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Memo to Brent Clayton and Richard Raione from Andrew Kugler dated March 21, 2008

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FOR A COMBINED LICENSE APPLICATION AT THE LEVY COUNTY SITE  
ADAMS ACCESSION NUMBER: ML080460443

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## List of Attendees – Levy County C-2 Readiness Assessment Visit

Location: Progress Energy Offices, Raleigh, North Carolina  
January 7-8, 2008

<b>Name</b>	<b>Affiliation</b>
Andy Kugler	NRC
Doug Bruner	NRC
Barry Zalcman	NRC
Rebekah Krieg	PNNL
Kristi Branch	PNNL
Ann Miracle	PNNL
Phil Meyer	PNNL
Paul Snead	Progress Energy
Garry Miller	Progress Energy
Bob Kitchen	Progress Energy
Jim Nevill	Progress Energy
Joe Pavletich	Progress Energy
Kyle Turner	McCallum-Turner
Susan Smillie	McCallum-Turner
Douglas Schlagel	McCallum-Turner
Thomas Slavonic	Enercon
Lorin Young	CH2M Hill
Rick Zeroka	CH2M Hill
Charles Uhlarik	CH2M Hill

**Agenda – Levy County Readiness Assessment Visit (C-2)**  
**Location: Progress Energy Headquarters, Raleigh, North Carolina**  
**January 7-8, 2008**

**Monday, January 7, 2008**

- 0800** Welcome and Introductions
- Opening Remarks from Progress Energy and U.S. Nuclear Regulatory Commission
  - Introductions and Agenda
  - Organization of Nuclear Plant Development and Joint Venture Team
  - Safety Orientation and Orientation to Levy Site
- 0900** Florida Site Selection Process Presentation – Kyle Turner
- 1030** Progress Energy Business Decisions Regarding Site Selection – Garry Miller
- 1200** Lunch
- 1300** Review of Florida Site Selection Evaluation Documentation  
(Meet with Technical Representatives as Needed)
- 1645** Debrief of Day's Issues
- 1700** Adjourn for the Day

**Tuesday, January 8, 2008**

- 0800** General Discussion and Questions from Yesterday
- 0830** Continue Review of Florida Site Selection Evaluation Documentation
- 1100** Status of Levy Environmental Report – Paul Snead and Lorin Young
- 1130** Lunch
- 1230** General Discussion and Concluding Remarks from U.S. Nuclear Regulatory Commission and Progress Energy
- 1300** Adjourn

**Additional Information Summarizing the Alternative Selection Process  
for the Levy County Site  
Environmental Readiness Assessment Visit (C-2)  
Location: Progress Energy Headquarters, Raleigh, North Carolina  
January 7-8, 2008**

Progress Energy Florida (PEF) and its contractors provided a presentation on the selection process it used for the Florida Site, which was based on the EPRI Siting Guide, "Site Selection and Evaluation Criteria for an Early Site Permit Application, March 2002". PEF conducted a site selection process that generally appears to comply with Regulatory Guide 4.2 and the Environmental Standard Review Plan (ESRP, NUREG-1555) guidance (Draft Section 9.3, Site Selection Process, Revision 1, July 2007).

PEF essentially started with no sites identified and did not tie off of a previous study. The new site is to be a regulated plant, so the region of interest was based on the PEF service area. PEF chose the service territory plus a one county band (to have a higher degree of confidence that the review wouldn't eliminate sites near the service territory). However, PEF did not go one county into the state of Georgia because there were concerns with transmission capacity congestion on the lines between Georgia and Florida, as well as concerns related to the Florida Public Utility Commission jurisdiction if the plant was in another state.

Initially PEF screened the region of interest to identify areas for further evaluation (candidate areas) based factors such as:

- Population density
- Water availability
- Dedicated land use (excluded Federal and State parks and surrounding buffer area, etc).
- Regional ecological features such as wetlands, etc.

To identify the potential sites, PEF scanned the areas of interest (candidate areas) with Google Earth and reconfirmed with US Geologic Service aerial photographs, topographic map and state and county maps. PEF used a list of considerations, including diversity of water sources, proximity to transmission/load centers, avoidance of high population areas, and minimal number of land parcels to identify 20 potential sites.

Weighting factors were developed by PEF and the list of 20 potential sites was revised to 8 candidate sites. Two of the top eight sites (ranked 6<sup>th</sup> and 8<sup>th</sup>) were replaced with lower-ranked sites. One of the two sites was eliminated because it used the same the water source as two other sites without offering any clear advantage. The other site had significant concerns (community support and economic development) and uncertainty in water supply. Weighting factors included cooling water supply, flooding, population, hazardous land use, railroad access, and transmission line access. Secondary weighting factors were also applied. These factors were based on input from the PEF Siting Management Team which related to community support, economic development, transmission, and environmental considerations.

PEF's project team flew over the eight sites and filtered the selection down to five alternative sites based on a list of 31 items. To determine which of the five sites would be the preferred site, the applicant gained access to the sites and performed geotechnical investigations including borings and geophysical studies, onsite reconnaissance surveys of the terrestrial communities, a detailed transmission impact study, a reliability study and an evaluation of the potential for land acquisition. PEF selected the Levy site as the preferred site.

One of the alternative sites is the existing Crystal River nuclear site. The identification of the remaining three alternative sites is not provided in this report. PEF does not own the land or have access to these sites, and has asked that the locations not be identified.

Following the presentation of the site selection process, a remote "tour" of the sites was conducted using Google Earth. The NRC staff was also shown pictures taken at each of the sites. The staff performed a detailed review of the site selection process document and reviewers asked questions during breakout meetings.

## **Summary of Specific Reviews**

### Overall Process

In general it appears that the applicant followed the guidance in the industry's siting guide (prepared by the Electric Power Research Institute) and in RG 4.2 and ESRP Section 9.3. There were some issues identified by the staff that may warrant further consideration if a combined license application is submitted for this site. These issues include:

- Some issues appeared to be counted more than once in the process. For example, issues related to transmission lines appear in at least three different places. It isn't clear if this situation would lead to one (or more) issues receiving undue weight in the balancing.
- When it searched for potential sites, PEF used a general criterion of a land area of approximately 6000 acres. While this number was not applied as a hard rule, the staff questioned whether viable sites that were smaller may have been eliminated.
- Some of the data discussed in ESRP 9.3 are not in the siting report. However, almost all of these items relate to the need for power and may appear in the environmental report in Chapter 8.

### Socioeconomics and Environmental Justice

The criteria used for the analysis and the analysis itself appeared to conform to NRC guidance. Areas where there were questions from the staff reviewer included the potential impacts from disrupting the rural, non-industrial community characteristics, and the degree of analysis of the potential for rural communities to have the institutional capacity or financial resources to respond effectively to rapid growth given the likely mismatch in terms of timing of project-related impacts and tax revenues.

### Hydrological

The staff did not identify any significant concerns related to the hydrology aspects of the site selection process. The information presented in the site selection report will need to be translated into impact assessments for the environmental report.

### Ecological

The criteria used for the analysis and the analysis itself appeared to conform to NRC guidance. However, it was noted and discussed that the ranking of the final eight sites was performed with a general design for the sites in mind. The ecological ranking may change as changes or improvements are made in the design of the facilities. For example, the potential for routing the cooling water discharge from the Levy site down to the Crystal River site and using the existing discharge line rather than running the line through the salt marsh and into the Gulf, would result in changes to the ecological impact and subsequently changes in the ranking of the final eight sites.

### **Conclusion**

Based on its review of information during the January 7-8, 2008 visit, the staff did not identify any major areas of concern. The team found that PEF staff and their contractors had conducted a site selection process that generally appears to comply with Regulatory Guide 4.2 and the ESRP (NUREG-1555) guidance (Draft Section 9.3, Site Selection Process, Revision 1, July 2007).

### **Issues for Follow-Up**

Because it is difficult for the prospective applicant to access the three alternative sites, the staff and PEF initiated a discussion regarding the approach that may be used during a future review of an application (e.g., how to address an onsite inspection in the face of complications in gaining access). The ESRP, Draft Section 9.3, states that "As a general rule, the EPM [environmental project manager] and specific reviewers for key technical disciplines should make an onsite inspection of each alternative site identified in the application". Although there is certainly value to being on the site, the staff believes that much of the value is in seeing the location of the site in relation to the potential source of cooling water, the surrounding land use, and the types of vegetation that may be in the area. To a large degree the virtual tour that took place in Raleigh provided that information. However, a visit to the area surrounding the site, combined with a virtual tour of the site (an expansion of the tour received at this C-2 review, with the addition of aerial photography) will likely be sufficient to provide enough information for the review of the alternative sites during the combined license review.

### **Items Not related to the C-2 Review**

Some items came up during the visits that were not directly related to the staff's review of the siting process. The more significant items were:

- PEF is finding that other regulatory agencies (e.g., U.S. Corps of Engineers) may expect the U.S. Nuclear Regulatory Commission (NRC) to complete its review for a combined

license (COL) before they issue their permits. But some of those permits are for items that are not within NRC jurisdiction under the revised rule for limited work authorizations.

- PEF recently purchased most of the land between the Levy site and the barge canal it plans to use as a cooling water source. This purchase will reduce the need to obtain easements for plant infrastructure.
- In order to gain limited-time access to the alternative sites for initial site characterization, PEF (through a third party for confidentiality) had to enter into short-term agreements with the landowners. This is an indication of the challenge that the staff will face regarding alternative site visits for an associated combined license application.
- About 50 percent of the environmental report sections have been drafted, although few have been delivered from the contractor to PEF yet. PEF expects to submit the combined license in July 2008.
- PEF plans to perform additional aquatic ecology sampling in response to staff questions posed during the C-1 visit. However, this sampling won't be completed in time for the combined license application. PEF indicated that the additional information will be submitted in a supplement to the application.

# NRO/DSER COVER PAGE

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ORIGINATOR: A. Kugler

SUBJECT: TRIP REPORT – JANUARY 7-8, 2008, READINESS ASSESSMENT (C-2) VISIT FOR A COMBINED LICENSE APPLICATION AT THE LEVY COUNTY SITE

SECRETARY: C. Nagel

DATE: February 15, 2008

●●● ROUTING LIST ●●●

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2.	A. Redden	/ /08
3.	B. Clayton	/ /08
4.	Secretary	/ /08

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