Progress Energy

Serial: NPD-NRC-2009-173
July 29, 2009

10CFR52.79

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

SHEARON HARRIS NUCLEAR POWER PLANT, UNITS 2 AND 3
DOCKET NOS. 52-022 AND 52-023
SUPPLEMENT 2 TO RESPONSE TO USACE REQUEST FOR ADDITIONAL INFORMATION REGARDING THE ENVIRONMENTAL REVIEW

References:

1. Letter from Donald Palmrose (NRC) to James Scarola (PEC), dated November 13, 2008, "Request for Additional Information Regarding the Environmental Review of the Combined License Application for Shearon Harris Nuclear Power Plant, Units 2 and 3"

2. Letter from Garry D. Miller (PEC) to U.S. Nuclear Regulatory Commission (NRC), dated February 12, 2009, "Response to USACE Request for Additional Information Regarding the Environmental Review", Serial NPD-NRC-2009-023

3. Letter from Garry D. Miller (PEC) to U.S. Nuclear Regulatory Commission (NRC), dated April 28, 2009, "Supplement 1 to Response to USACE Request for Additional Information Regarding the Environmental Review", Serial NPD-NRC-2009-083

Ladies and Gentlemen:

Progress Energy Carolinas, Inc. (PEC) hereby submits a supplemental response to the United States Army Corps of Engineers (USACE) request for additional information (RAI) provided in Enclosure 2 of Reference 1. A revised response to one of the USACE RAI questions (USACE-28) is provided in the enclosure to this letter.

If you have any further questions, or need additional information, please contact Bob Kitchen at (919) 546-6992, or me at (919) 546-6107.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on July 29, 2009.

Sincerely,

Garry D. Miller
General Manager
Nuclear Plant Development

Enclosure/Attachment

Progress Energy Carolinas, Inc.
P.O. Box 1551
Raleigh, NC 27602

D084
NRO

cc (3 copies):
Dr. Donald Palmrose, U.S. NRC Environmental Project Manager

cc: U.S. NRC Region II, Regional Administrator
U.S. NRC Resident Inspector, SHNPP Unit 1
Mr. Brian Hughes, U.S. NRC Project Manager
Mr. Monte Matthews, U.S. Army Corps of Engineers

Shearon Harris Nuclear Power Plant Units 2 and 3
Supplement 2 to Response to USACE Request for Additional Information Regarding the Environmental Review, dated November 13, 2008

NRC RAI #	Progress Energy RAI #	Progress Energy Response
USACE-1	H-0351	February 12, 2009; Serial NPD-NRC-2009-023
USACE-2	H-0352	February 12, 2009; Serial NPD-NRC-2009-023
USACE-3	H-0353	February 12, 2009; Serial NPD-NRC-2009-023
USACE-4	H-0354	February 12, 2009; Serial NPD-NRC-2009-023
USACE-5	H-0355	February 12, 2009; Serial NPD-NRC-2009-023
USACE-6	H-0356	February 12, 2009; Serial NPD-NRC-2009-023
USACE-7	H-0357	February 12, 2009; Serial NPD-NRC-2009-023
USACE-8	H-0358	February 12, 2009; Serial NPD-NRC-2009-023
USACE-9	H-0359	February 12, 2009; Serial NPD-NRC-2009-023
USACE-10	H-0360	February 12, 2009; Serial NPD-NRC-2009-023
USACE-11	H-0361	February 12, 2009; Serial NPD-NRC-2009-023
USACE-12	H-0362	February 12, 2009; Serial NPD-NRC-2009-023
USACE-13	H-0363	February 12, 2009; Serial NPD-NRC-2009-023
USACE-14	H-0364	February 12, 2009; Serial NPD-NRC-2009-023
USACE-15	H-0456	April 28, 2009; Serial NPD-NRC-2009-083
USACE-16	H-0366	February 12, 2009; Serial NPD-NRC-2009-023
USACE-17	H-0367	February 12, 2009; Serial NPD-NRC-2009-023
USACE-18	H-0368	February 12, 2009; Serial NPD-NRC-2009-023
USACE-19	H-0369	February 12, 2009; Serial NPD-NRC-2009-023
USACE-20	H-0370	February 12, 2009; Serial NPD-NRC-2009-023
USACE-21	H-0371	February 12, 2009; Serial NPD-NRC-2009-023
USACE-22	H-0372	February 12, 2009; Serial NPD-NRC-2009-023
USACE-23	H-0373	February 12, 2009; Serial NPD-NRC-2009-023
USACE-24	H-0374	February 12, 2009; Serial NPD-NRC-2009-023
USACE-25	H-0375	February 12, 2009; Serial NPD-NRC-2009-023
USACE-26	H-0376	February 12, 2009; Serial NPD-NRC-2009-023
USACE-27	H-0377	February 12, 2009; Serial NPD-NRC-2009-023
USACE-28	H-0481	Revised response enclosed – see following pages
USACE-29	H-0379	February 12, 2009; Serial NPD-NRC-2009-023
USACE-30	H-0380	February 12, 2009; Serial NPD-NRC-2009-023
USACE-31	H-0457	April 28, 2009; Serial NPD-NRC-2009-083

Attachment	Associated NRC RAI #	Pages Included
Conceptual Mitigation Plan	USACE-28	5

NRC Letter No.: HAR-RAI-LTR-ER-USACE-001

NRC Letter Date: November 13, 2008

NRC Review of Environmental Report

NRC RAI #: USACE-28

Text of NRC RAI:

Please provide a conceptual mitigation plan to compensate for unavoidable aquatic impacts for the preferred alternative.

Necessary as a component of the 404 permit review process for unavoidable impacts. However, a Department of the Army (DA) cannot be authorized on the basis of a conceptual plan. A final mitigation plan must be reviewed and approved prior to DA permit issuance.

PGN RAI ID #: H-0481

PGN Response to NRC RAI:

The development of mitigation plans is ongoing. PEC is coordinating with the USACE Wilmington District, the USFWS, and the North Carolina Department of Environment and Natural Resources (NCDENR) (including the NCWRC) to develop appropriate mitigation plans for the impacts from the proposed project. The mitigation plan or plans will be made available upon completion.

Attached is the requested "Conceptual Plan for Compensatory Mitigation for Wetland and Stream Impacts".

Associated HAR COL Application Revisions:

No COLA revisions have been identified associated with this response.

Attachments/Enclosures:

Harris Advanced Reactor (HAR) Project - Conceptual Plan for Compensatory Mitigation for Wetland and Stream Impacts [5 pages attached]

Harris Advanced Reactor (HAR) Project

Conceptual Plan for Compensatory Mitigation for Wetland and Stream Impacts

Introduction

Progress Energy Carolinas, Inc. (PEC) is proposing to build and operate two new nuclear power generation units at the Shearon Harris Nuclear Plant, near New Hill, North Carolina. The project, known as the Harris Advanced Reactor (HAR) project, is the subject of a Combined License Application (COLA) submitted to the U.S. Nuclear Regulatory Commission (NRC) in February 2008. Major environmental permits for the project will include Clean Water Act Section 404 permit for dredged or fill material and Clean Water Act Section 401 Water Quality Certification (WQC), to be obtained from the U.S. Army Corps of Engineers (ACOE) and the North Carolina Department of Environment and Natural Resources Division of Water Quality (DWQ), respectively.

The following project elements are expected to be reviewed during these permitting processes: increase in the level of Harris Lake from the existing 220 feet to 240 feet; wetland and stream impacts associated with raising the lake; withdrawal of makeup water from the Cape Fear River in the vicinity of the Buckhorn Dam; impacts associated with construction and placement of the intake in the Cape Fear River; and impacts on wetlands and streams associated with the balance of the project's activities, including construction of the nuclear units and associated cooling towers and construction of additional transmission capacity to carry the electricity from the plant site. The Environmental Report (ER), Part 3 of the COLA, describes the project and expected impacts on natural resources in more detail.

As noted in the ER, raising the level of Harris Lake will inundate existing wetlands and streams and cause some impacts to aquatic resources related to change of use, conversion and/or loss. The project is being configured to avoid wetland impacts where possible, and to minimize those impacts where they must occur. The majority of wetland and stream impacts associated with the project result from the lake expansion, where existing emergent and fringe wetlands and segments of tributary streams will be converted to open water. As part of the Section 404 permitting process, it is expected that compensatory mitigation will be required for the unavoidable impacts to wetlands and streams. PEC is committed to providing the required mitigation prior to or coincident with the impacts and has begun the process of developing a plan to fulfill the Section 404 requirements.

Current estimates of wetland and stream impacts associated with the project indicate that approximately 595 acres of wetlands and 135,800 feet of streams will be impacted. These estimates are based on field delineation of wetlands and characterization of streams performed in late 2008. The stream and wetland study is undergoing a quality control review and when that effort is completed the proposed delineation maps will be field verified with ACOE and DWQ. Once the agency reviews have been completed, the package will be submitted to ACOE for a Jurisdictional Determination (JD), which

will document the wetland and stream areas to be impacted and provide the basis for determination of mitigation needs for the project.

Purpose

The purpose of this conceptual plan is to outline the general approach to be taken by PEC for mitigation planning and development of a mitigation program for the HAR project. While some mitigation opportunities have already been identified, there are many more to be evaluated as the mitigation planning process moves forward.

The following sections describe PEC's planned approach to mitigation, the process to be followed by PEC in developing the mitigation program, and some specific examples of mitigation opportunities currently under study.

Approach

PEC has developed an approach to mitigation planning that encompasses the following principles:

- Mitigation should be provided as close as possible to the location of the impact
- A watershed approach should be taken, identifying projects that contribute to the overall environmental quality of the Harris Lake watershed and individual stream and wetland systems within the watershed
- Mitigation should be performed to the extent possible on stream systems rather than unconnected segments to achieve greatest benefit
- The dichotomous key incorporated into the North Carolina Wetland Assessment Method (NCWAM) will be used to document wetland impact and mitigation types so that impacts and mitigation can be evaluated using the same benchmarks.
- ACOE's Interagency Stream Mitigation Guidelines will be referenced when developing stream mitigation opportunities.
- Progress Energy Carolinas-owned land within the watershed should be leveraged to the extent possible to provide mitigation opportunities
- Floodplain impacts should be considered and addressed in the development of mitigation opportunities
- Other community and natural resource interests should be considered during mitigation planning to balance competing interests and needs

PEC will implement these principles through careful screening of mitigation opportunities, consultation and collaboration with agencies and stakeholders, and utilization of the process described in the following section.

At this time, PEC intends to pursue development of an Umbrella Mitigation Bank (Bank) to capture mitigation opportunities. To initiate the Bank, PEC understands that an Umbrella Mitigation Banking

Instrument (Instrument) must be executed with ACOE to establish the legal framework under which the Bank will be operated. It is further understood that an initial mitigation opportunity should be brought forward with the Instrument to "open" the bank. PEC has identified the Utley Creek system as the likely initial opportunity and is working to develop the Instrument and the prospectus for review by ACOE and the Interagency Review Team (IRT). Once the Bank has been established, PEC will use it to capture other opportunities in anticipation of the mitigation needs for the HAR project. When mitigation credits are needed, they will be supplied from Bank mitigation projects to the extent possible. PEC may identify project-specific mitigation opportunities to supplement the banked opportunities and intends to keep this option open as the mitigation plan is being developed. If necessary, credits can also be obtained from commercial mitigation banks or the North Carolina Ecosystem Enhancement Program. The final Mitigation Plan will present PEC's full plan for timely mitigation of project impacts and may include a combination of the above-mentioned credit sources.

Process

PEC has begun the mitigation planning process using a stepwise approach:

1. Identify opportunities – Using available mapping of the Harris Lake area and PEC property holdings a team of PEC environmental scientists familiar with the Harris lands and lake system performs a desktop review to identify potential mitigation projects. Projects are suggested based on the presence of streams or wetlands that could benefit from restoration, enhancement or preservation. This process is being performed initially for PEC-owned lands within the Harris Hydrologic Unit Code (HUC) and outside of the Harris HUC in the Cape Fear River basin.

2. Screen opportunity – More detailed review of each suggested opportunity is performed by one or more of the PEC environmental scientists to assess its potential, the type of mitigation credits that could be created and any impacts on the operation of PEC facilities if the location were to become encumbered with property restrictions or a conservation easement as part of the mitigation program. The screening process also identifies where opportunities cross non-PEC lands and assesses the potential for collaboration with other property owners to extend the mitigation project through those lands.

3. Perform field reconnaissance – Screened opportunities are then field reviewed by the PEC team for a visual assessment of the resource and preliminary identification of the types of restoration or enhancement that could be performed, as well as an assessment of where preservation buffers might be located.

4. Initiate third party assessment of opportunity – Once a field reconnaissance has been completed, the PEC team decides whether to engage the services of a third party natural resource consultant to develop a conceptual plan for the mitigation opportunity. The consultant performs a detailed field review and presents a conceptual plan for discussion with the PEC team. At this point PEC engages agency representatives in informal discussion of the opportunity and leads a site visit to the area to discuss the mitigation concepts with the agency.

5. Develop prospectus or mitigation plan – Once agency feedback has been received PEC works with its consultant to modify the conceptual plan and develop a preliminary plan and prospectus for the mitigation opportunity.

6. Submit plan – For each individual opportunity a prospectus or conceptual development plan will be submitted to ACOE and the IRT for approval.

7. Bank approved opportunity – Once an opportunity has been approved by ACOE and the IRT it will be deposited in the Bank for future use.

Potential Mitigation Projects

Following are three examples of mitigation opportunities that have been screened and field checked by PEC personnel and evaluated by third party advisors. The Utley Creek opportunity is nearing the "prospectus" stage.

Utley Creek system – Utley Creek feeds the northeast corner of the White Oak Creek Branch of Harris Lake. Along Utley Creek are two formerly impounded areas, Thomas Mill Pond (aka Aerosport Pond) and the "Greentree" reservoir. The impoundment areas have been identified as having potential mitigation value through wetland restoration efforts. Utley Creek also exhibits the potential for creation of mitigation through restoration, enhancement and preservation activities. A preliminary assessment of mitigation opportunities on Progress Energy Carolinas-owned property in the area of Thomas Mill Pond and the "Greentree" reservoir indicates that over 30,000 stream credits and 11.6 acres of wetland credits could be created. PEC has been coordinating the studies of this area with Western Wake Partners (WWP) in connection with WWP's need for natural resource mitigation credits and it is likely that the opportunity would be developed in two phases to meet the timing requirements of the two projects.

The lower reach of Utley Creek, between the "Greentree" reservoir and Harris Lake will be inundated at the 240 foot elevation, converting it from stream to open water and wetlands. This area will be evaluated as part of the mitigation plan for fringe and emergent wetlands on the perimeter of the expanded lake (see below).

Buckhorn Creek system – Buckhorn Creek exits Harris Lake at the main dam and flows 4.5 miles to its confluence with the Cape Fear River. In 2009 PEC will remove a non-operational hydroelectric plant from the lower reach of Buckhorn Creek. Also in 2009 PEC is conducting an in-stream flow study of the creek to evaluate flow regimes associated with a likely future minimum release from Harris Dam into Buckhorn Creek. The Buckhorn Creek system has been identified as a good candidate for stream restoration, enhancement and preservation activities in conjunction with the development of the HAR project. A preliminary assessment of mitigation opportunities in the lower 1.7 miles of Buckhorn Creek indicates that over 11,000 stream credits and 4.8 acres of wetland restoration could be created along

that section of Buckhorn Creek and its tributaries. In addition, opportunities have been identified to create openings in the levee along Buckhorn Creek that was placed to create a reservoir for the hydroelectric plant, resulting in reconnection of the lower Buckhorn Creek area with the Cape Fear River for flood storage during extraordinarily high river flows. Once the in-stream flow study is completed and future flow conditions in the stream have been identified, the remaining 2.8 miles of Buckhorn Creek, and associated tributary streams, will be evaluated for mitigation potential.

Fringe/emergent wetlands – In the early 1980's, when Harris Lake was created, wetlands formed in the upland and near shore fringes of the lake. These fringe and emergent wetlands will be inundated when the lake level rises to 240 feet, but it is expected that new wetlands will form in a similar fashion as the lake rises and stabilizes at its new elevation. PEC has done a preliminary evaluation of slope and soil types at the 240' elevation to verify that conditions are present that would support this new wetland formation. As mitigation planning proceeds PEC will develop a detailed mitigation plan for perimeter wetland creation, for consideration by the agencies. The plan will detail where wetlands are expected to form, the types of wetlands that would form, and the monitoring that would be performed to demonstrate the wetland creation.

These opportunities represent a small subset of the areas around Harris Lake to be screened and evaluated for mitigation potential. Other opportunities are being screened in the areas of White Oak Creek, Little White Oak Creek, Thomas Creek, Tom Jack Creek and smaller drainage areas around the lake. PEC will continue these mitigation planning efforts over the next 12 to 18 months to develop an overall mitigation program with the goal of banking sufficient mitigation credits to support the Section 404/401 WQC permitting process for the HAR project. A Mitigation Plan will be submitted to ACOE and DWQ with the Section 404/401 WQC application, with details of expected impacts, credits needed, banked mitigation sites, and, if the banked sites do not supply the necessary credits, how PEC will obtain additional mitigation credits through project-specific mitigation or credits from commercial mitigation banks or the North Carolina Ecosystem Enhancement Program.