Progress Energy

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

Ref: 10 CFR 54

April 1, 2010
3F0410-03

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

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

References: (1) CR-3 to NRC letter, dated December 16, 2008, "Crystal River Unit 3 – Application for Renewal of Operating License"

(2) NRC to CR-3 letter, dated March 5, 2010, "Request for Additional Information for the Review of the Crystal River Unit 3 Nuclear Generating Plant, License Renewal Application (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 March 5, 2010, provided a request for additional information (RAI) concerning the CR-3 License Renewal Application and a request for documents (Reference 2). The Enclosure to this letter provides the response to the RAI. A response to the request for documents is being provided in a separate letter (CR-3 letter 3F0410-04 dated April 1, 2010).

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 Request for Additional Information

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

AD35
NRR

STATE OF FLORIDA

COUNTY OF CITRUS

Jon A. Franke states that he is the Vice President, Crystal River Nuclear Plant for Florida Power Corporation, doing business as Progress Energy Florida, Inc.; that he is authorized on the part of said company to sign and file with the Nuclear Regulatory Commission the information attached hereto; and that all such statements made and matters set forth therein are true and correct to the best of his knowledge, information, and belief.

Jon A. Franke
Vice President
Crystal River Nuclear Plant

The foregoing document was acknowledged before me this 1 day of April, 2010, by Jon A. Franke.

Tara Barten

Signature of Notary Public
State of Florida

TARA BARTEN
Notary Public - State of Florida
My Comm. Expires Jan 29, 2012
Commission # DD 856180

(Print, type, or stamp Commissioned Name of Notary Public)

Personally Known ✓ -OR- Produced Identification _____

PROGRESS ENERGY FLORIDA, INC.

CRYSTAL RIVER UNIT 3

DOCKET NUMBER 50 - 302 / LICENSE NUMBER DPR - 72

ENCLOSURE

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

The following requests for additional information are needed by the U.S. Nuclear Regulatory Commission (NRC) staff to complete its review of the Crystal River Nuclear Generating Plant, Unit 3 (CR-3) application for license renewal and prepare the draft supplemental environmental impact statement. To support the staff's continued review of the CR-3 environmental report (ER), please provide the information and documents described below. Those items marked with letter and number (i.e., AQ-1, H-2, etc.) refer to corresponding items in the Revised Environmental Site Audit Needs List dated October 6, 2009.

RAI 1 – Cumulative Impacts

NRC staff must evaluate the cumulative impacts of extended operation of all reasonably foreseeable activities. The following information is needed to complete the cumulative impact evaluation.

1. Provide information on the status of the refurbishment activities discussed in Section 3.2 of the ER. Also, provide information on when the power uprate amendment is expected to be submitted.

Response:

The Generic Environmental Impact Statement for License Renewal of Nuclear Plants (GEIS) describes true refurbishment activities as those "...undertaken to prepare a nuclear power plant for operation following license renewal." The License Renewal Environmental Report listed the following refurbishment activities in Section 3.2:

- *Transport of the new steam generators from Babcock & Wilcox to the CR-3 site for temporary storage;*
- *Removal of old steam generators through the new construction opening in the Reactor Building (RB), and transport to mausoleum (Once-through Steam Generator building) using a multi-axle crawler;*
- *Transport of the new steam generators from the terminus of the on-site railroad spur to the containment building using a crawler;*
- *Passing the steam generators into containment through the new construction opening in the RB; and,*
- *Installation of the new steam generators.*

These activities were completed during the fall 2009 Refueling Outage, according to schedule.

Activities associated with the proposed Extended Power Uprate (EPU), such as upgrades of high- and low-pressure turbines, are not refurbishment per se, as they would be intended to increase the plant's generating capacity rather than allow the unit to operate for an additional 20 years beyond the original license term.

Progress Energy Florida, Inc. (PEF) will submit the Extended Power Uprate License Amendment Request prior to June 1, 2010.

2. Provide information on the resources that would be affected by the construction of the proposed Levy County nuclear plants' cooling tower discharge line to the CR-3 discharge canal. Also provide a summary of impacts the potentially chemically-treated cooling water from the Levy County plants may have on the CR-3 discharge canal.

Response Part 1 - Affected Resources:

The Levy Nuclear Plant Units 1 and 2 (LNP) Combined Operating License (COL) Environmental Report (ER) considers impacts of construction of the proposed cooling tower blowdown line on a range of resources including Land Use, Cultural Resources, Water Resources, Ecological Resources, and Socioeconomic Resources. In every case but one (Traffic and Transportation), the LNP COL ER concludes that impacts from construction of the blowdown line would be temporary and mitigable, therefore SMALL.

Background

The proposed LNP blowdown line(s) would extend south approximately four miles from the LNP site to the Cross Florida Barge Canal (CFBC), then move in a southwesterly direction for approximately 5.5 miles, paralleling the north bank of the CFBC, then veer south three miles to the Crystal River discharge canal (PEF 2010, Figure 2.3-13. See references below). The total length of the blowdown pipeline(s) would be approximately 12.5 miles (Sargent & Lundy 2009, p. 10). Based on the conceptual design study (Sargent & Lundy 2009), there would be a dedicated blowdown line for each set of mechanical-draft cooling towers. Each blowdown line would be constructed of 54-inch diameter high-density polyethylene (HDPE) pipe and installed in an approximately 4-to-6-foot-deep backfilled trench.

Schedule/Workforce

A firm schedule for construction of the blowdown line(s) has not been established. However, based on the over-arching project schedule, as presented in Section 4.2 of the LNP COL ER, it appears that construction of the blowdown line(s) could begin as early as 2012 or as late as 2016. For this response, 2012 was assumed which is extremely conservative. Based on large natural gas pipeline construction projects, a reasonable analogue, the blowdown pipeline is likely to be built in phases, with separate crews engaged in (1) land clearing for the pipeline corridor, (2) grading the pipeline corridor, (3) trenching, (4) installing pipe, and (5) cleanup and restoration.

The total number of pipeline workers in the field at any given time could range from 50 to 200, depending on the stage of the project. The size of the construction workforce would be determined by the firm that ultimately wins the contract to build the blowdown line(s), as would the number of crews working simultaneously and the heavy equipment used. The size of the workforce and number of crews would also determine how quickly the project is completed. Typically, land (tree) clearing is carried out by crews using feller-bunchers ("timberjacks") and skidders, grading is handled with bulldozers and motor-graders, trenches are excavated using tracked excavators ("trackhoes") and pipe is installed using a side boom or similar equipment.

Land Use

The LNP COL ER estimated that 34 hectares (84 acres) of natural habitat/undeveloped land (including forest land, wetland, shrub/brush rangeland, ponds, streams and canals) would be converted to the blowdown pipeline corridor consisting of open land with low-growing grasses and forbs (PEF 2010, Table 4.1-5). However, much of the land in the region was converted from native upland forest and prairie to pine plantation and pastureland in the 19th and 20th centuries. Silviculture, agriculture, residential development, and mining now predominate where forest and prairie once existed (PEF 2010, pp. 4-14 and p. 4-44; PEF 2010, Table 4.1-5).

Cultural Resources

With regard to culturally significant properties, PEF conducted cultural resources surveys in 2007-2008 of the LNP site and support facilities, including the (preliminary) blowdown pipeline route, and determined that the project's Areas of Potential Effect (APEs) "did not include any resources that were listed in or eligible to be listed in the National Register of Historic Places" (PEF 2010, p. 4-15). Moreover, PEF concluded that "the LNP site lies within an area of low probability for containing significant archaeological resources" (PEF 2010, p. 4-17).

Water Resources

The LNP COL ER evaluated potential impacts of building LNP and support facilities, including the blowdown line(s), on water quality of the Withlacoochee River and CFBC. The ER acknowledged that construction would be associated with a temporary increase in stormwater runoff, erosion, and sedimentation, but asserted that any changes in water quality would be temporary, lasting only as long as it took to establish/re-establish vegetative cover in the disturbed areas. Impacts to down-gradient water quality would also be mitigated by proper erosion control measures and stormwater best management practices.

Ecological Resources

The LNP COL ER noted that construction of support facilities (including the blowdown pipeline corridor) would result in the loss or alteration of less than a hundred acres of wildlife habitat, but placed these losses in a regional and historical context, noting that areas that would be affected by construction had already been disturbed "through silviculture and other anthropogenic activities" (PEF 2010, p. 4-44). The LNP COL ER noted also that impacts to aquatic organisms from pipeline construction (canal/stream crossings) would be "localized and temporary" and mitigated by best management practices (PEF 2010, pp. 4-50 and 4-51).

Socioeconomic Resources

Social and economic impacts from the blowdown line construction would be mostly positive. The current economic slowdown has idled large numbers of construction workers in the Crystal River region, and the LNP project is expected to improve this situation. Construction workers will in turn purchase goods and services in the region, further benefitting the regional economy. Impacts on water and wastewater services/availability are expected to be small. No decline in the quality of public facilities and services is anticipated. Construction impacts on traffic as a result of increased volume from construction activities are expected to be SMALL to MODERATE, however.

Virtually all of the activities associated with CR-3 Steam Generator Replacement (completed in December 2009), CR-3 EPU (scheduled to be completed in 2012), and development of the CR-3 Independent Spent Fuel Storage Installation (scheduled for completion in 2012) will have been completed by the time construction begins in earnest on Levy Nuclear Plant Units 1 and 2. Thus there would be few, if any, cumulative construction impacts. There would, however, be several short periods (2013, 2015, and 2017) when refueling outages at CR-3 coincide with construction of the LNP. During these brief periods (~40 days), there would be additional traffic congestion in the Crystal River area, and particularly along US Highway 19/98. The primary impact would be to prolong the daily commute of CR-3 permanent employees and outage workers.

Response Part 2 - Impact of Water Discharge

The combined discharge from the LNP would consist of cooling tower blowdown (28,260 gallons per minute (gpm)), Sanitary Waste Treatment Plant effluent (62.5 gpm), effluent from the Wastewater Retention Basin (850 gpm), and liquid radwaste (75 gpm) (Sargent & Lundy 2009). The total discharge flow would therefore be 29,248 gpm per unit or 58,496 gpm (i.e., approximately 84 million gallons per day (MGD) for both units. The LNP discharge flow would equal 4.4 percent of the Crystal River Energy Complex (CREC) permitted flow of 1,898 MGD in summer and 5.2 percent of the CREC permitted flow of 1,613 MGD in winter. Any chemicals/ constituents in the LNP discharge would therefore be diluted 19 to 23 times upon merging with the CREC discharge flow, which consists of once-through cooling water from CR-1, -2, and -3 and cooling tower blowdown from CR-4 and -5.

As discussed in considerable detail in the Progress Energy RAI Revised Response No. L-0521 (July 29, 2009) to NRC RAI 9.4.2-1 for the LNP, regulatory requirements and the Florida Department of Environmental Protection (FDEP)-issued National Pollution Discharge Elimination System (NPDES) criteria were addressed as follows:

> *The addition of LNP wastewater to the CREC discharge canal is projected to result in compliance with all regulatory requirements prior to release into the Gulf of Mexico via the final outfall...There are no outstanding water quality issues with the current CREC, other than the need to maintain the thermal limit at the point of discharge {point of compliance}, which requires constant monitoring and operator attention.*
>
> *For wastes discharged to surface waters, PEF must comply with an NPDES permit issued by FDEP. The chemicals that will be used {and discharged} will be subject to review and approval for use by the FDEP.*

Another Progress Energy RAI Revised Response (No. L-0399, dated June 12, 2009) to NRC RAI 2.3.1-3 addresses more specifically the applicable Florida Administrative Code (F.A.C.) and federal regulatory requirements:

> *The discharge requirements of the LNP blowdown are still under consideration by FDEP as part of the state-administered NPDES permitting process. It is anticipated that the combined LNP discharge will be required to meet the federal 40 CFR 423 effluent criteria requirements for new steam electric power generating plants, which are incorporated by reference in Florida Rule 62-660.400 F.A.C. Typically, compliance with 40 CFR 423 requirements is required based on monitoring at an internal outfall prior to commingling with another waste stream. The combined LNP-CREC discharge will also*

be required to be compliant with water quality-based effluent limitations prior to its release into the Gulf of Mexico in accordance with Rule 62-650, F.A.C.

References

PEF, 2010. Levy Nuclear Plant Units 1 and 2 COL Application. Part 3, Applicant's Environmental Report – Combined License Stage. Revision 1. October.

Sargent & Lundy, 2009. Conceptual Design of the Circulating Water Blowdown Being Discharged at the Crystal River Plant Site. Report No. LNG-CWS-GER-005 Rev 2. November 23.

RAI 2 – Air Quality and Meteorology

1. Provide documentation demonstrating that Progress Energy submitted an application to renew its Title V permit to the Florida Department of Environmental Protection (FL DEP) on or before the renewal application due date of July 5, 2009, specified in the permit and that the renewal application was accepted by FL DEP, allowing the Title V Permit to remain in effect past its expiration date during FL DEP's processing of the renewal application.

Response:

This request pertains to existing or public documentation, and the requested documentation is provided in a separate letter.

RAI 3 – Aquatic Ecology

1. Provide a summary of releases from the Progress Energy Mariculture Center 1992-2008.

Response:

This request pertains to existing or public documentation, and the requested documentation is provided in a separate letter.

2. Progress Energy 2009 – Environmental Support Document Crystal River Unit 3 South Cooling Tower Laydown Area, Citrus County, Florida;

Response:

This request pertains to existing or public documentation, and the requested documentation is provided in a separate letter.

3. Ager et al. 2008 – Crystal River Power Plant Fish Impingement Study Report. Please provide the entire report, if possible. Otherwise provide the following:
   - Executive Summary
   - Chapter 2 (including the figures and tables)
   - Tables 4 through 11, 13 through 20, and 34 through 40

- Figures 3 through 4, 6 through 19
- Appendices 1 through 32

Response:

This request pertains to existing or public documentation, and the requested documentation is provided in a separate letter.

4. Copies of the 1993-1995 Seagrass Monitoring Reports, November 2001 Seagrass Recovery Report, the 2008 Seagrass Quantification Report, and the final report of the Seagrass Technical Advisory Committee.

Response:

This request pertains to existing or public documentation, and the requested documentation is provided in a separate letter.

5. TP-042 Marine Turtle Permit (the current annual permit).

Response:

This request pertains to existing or public documentation, and the requested documentation is provided in a separate letter.

6. AQ-1 (Also T-20) – The response letters from National Marine Fisheries Service (NMFS) and Florida Wildlife Commission regarding listed species and sensitive habitats were not provided (only the Fish and Wildlife Service (FWS) response letter was provided). Correspondence from NMFS and Florida or a statement that none exists should be provided.

Response:

The letter from the NMFS has been included in a separately-filed letter transmitting the response to the request for documents. No response to the correspondence sent to the State of Florida could be found.

7. Provide copies of the reports prepared by Applied Biology, Inc (1983), Florida Power Corporation (FPC) (1978b), FPC (1982b). Complete citations for these reports are listed on page 4-2 of the 316 Study.

Response:

The requested report "Florida Power Corporation (FPC) (1978b)" has been included in a separately-filed letter transmitting the response to the request for documents. The other two requested documents could not be located.

RAI 4 – Hydrology

1. H-9 (also H-5) – Quarterly National Pollutant Discharge Elimination System, Industrial Waste Water, Domestic Waste Water monitoring reports (for past 5 years) with cover letters to the FL DEP. Provide the full reports and cover letters. Spreadsheets of sampling data were previously submitted, however the reports provide more comprehensive information on what was sampled, standards measured against, exceedances, explanations for exceedances, and corrective actions as well as maps and other useful information.

   If the quarterly data is summarized in annual reports, then the annual reports may be submitted instead of the quarterly reports. Because these documents can be large, electronic files can be submitted in lieu of hardcopies.

Response:

This request pertains to existing or public documentation, and the requested documentation is provided in a separate letter.

RAI 5 – Terrestrial Ecology

1. T-7 – Provide the tables, figures, and appendices from the report "Environmental Support Document, Crystal River Unit 3, South Cooling Tower Laydown Area, Citrus County Florida."

Response:

This request pertains to existing or public documentation, and the requested documentation is provided in a separate letter.

2. T-10 – The November 5, 2009, request for additional information response provided a map of the percolation ponds and an FWS wood stork colonies core foraging areas map, but there is no explanatory text provided.

   Provide a brief description of wood stork use of the site along with an explanation of how the two figures relate to that use.

   Provide the source for the FWS wood stock map so it can be properly cited.

Response:

The wood stork is a gregarious species that nests in colonies and roosts and feeds in flocks, often in association with other species of water birds. Wood storks nesting in central Florida are known to disperse during non-breeding seasons as far north as southern Georgia.

Wood storks use freshwater and estuarine wetlands as feeding, nesting, and roosting sites. Storks are especially sensitive to environmental conditions at feeding sites, and thus birds may fly relatively long distances either daily or between regions annually, seeking adequate food resources.

Storks are especially sensitive to any manipulation of a wetland feeding site that results in either reduced amounts, or changes in the timing, of food availability. Storks feed primarily on small fish between one and eight inches in length and successful foraging sites are those areas where the water is shallow, between two and 15 inches deep. Topminnows and sunfish are the most common prey items of wood storks.

Nesting wood storks do most of their feeding in wetlands between five and 40 miles from the colony, with some being seen to travel as much as 75 miles. During breeding season, wood storks may utilize anywhere from 50 to 200 different feeding sites. If surrounding conditions are poor (e.g., droughts reducing the number of wetlands in a region), storks will shift nesting sites or not nest. Non-breeding storks are free to travel much greater distances and remain in a region only for as long as sufficient food is available. Differences between years in the seasonal distribution and amount of rainfall usually mean that storks will differ between years in where and when they feed.

In the central Florida region, wood storks typically nest in spring and summer, with young fledging during July and August. Core foraging areas are considered to be within a 15-mile radius of nesting colonies in central Florida. There are no known nesting colonies or core foraging areas identified in or around the CREC site. Wood storks have been observed around the property, and have been observed occasionally foraging in site ponds, impoundments, ditches; as well as in creeks, and wetland areas surrounding the CREC property.

Due to the rather specific food requirements, and the need for shallow or draining wetlands where fish tend to become concentrated or trapped in isolated pools, it is unlikely that small impoundments within the CREC provide significant or valuable foraging habitat for wood storks. Rapid changes in water levels, vegetation maintenance, industrial activity (movement and noise), pond maintenance, and pond physical characteristics all reduce the amount of prey availability and suitability of the ponds as foraging habitat for wood storks.

It is more likely that wood storks transit the property as they seek more natural and productive shallow-water foraging habitat to the north and south along the central west Florida coast. The use of CREC water habitats by wood storks would be limited to those infrequent times when water levels, prey abundance, and site activities were all at acceptable level, as to allow wood storks the ability to successfully forage.

Regarding the source for the "Florida Wood Stork Colonies Core Foraging Areas Map," the source is from the North Florida Ecological Services Office website. It may be found in the 'Wood Storks" area of the site (see www.fws.gov/northflorida/WoodStorks/wood-storks.htm).

3. T-14 – No information was provided on measures to protect threatened or endangered species during transmission line ROW maintenance. The letter from the FWS to Progress Energy (October 28, 2008) regarding impacts to the listed eastern indigo snake provides recommendations for mitigation for this species when carrying out transmission line maintenance, including the submission of a protection/education plan that, if implemented, would result in a "may affect, not likely to adversely affect" determination. Provide a transmission line ROW maintenance plan per the recommendations of the FWS to protect the eastern indigo snake and its habitat that includes the protection/education plan referenced above.

Response:

PEF has developed pamphlets in Spanish and English (see below) that educate personnel engaged in Right-of-Way (ROW) vegetation management and transmission system maintenance on the Eastern indigo snake and the laws that protect this species. These pamphlets are provided to ROW maintenance personnel employed by PEF and contractors. The pamphlets contain color photographs of Eastern indigo snakes, and provide detailed information on the indigo snake's identification, habitat, and life history. The pamphlets also provide information on the snake's legal status and applicable prohibitions, and include instructions on what to do if ROW maintenance personnel encounter an Eastern indigo snake, including names and telephone numbers of points of contact (Regional Environmental Coordinators).

One of the pamphlets describes how to visually differentiate between the Eastern indigo snake and the black racer.

Because Eastern indigo snakes commonly use gopher tortoise burrows for refuge and egg laying, PEF has also created a "Gopher Tortoise and Eastern Indigo Snake Protection Awareness" pamphlet (see below) for Transmission Delivery staff that contains photographs of the two species and directs Transmission Delivery staff to stop work and contact a supervisor if either of these species is observed in an area slated for construction or vegetation management. The same pamphlet calls for gopher tortoise burrows to be marked as the centers of 25-foot radius exclusion areas.

Furthermore, all ROW maintenance personnel (PEF as well as contractors) receive training regarding the identification of the Eastern indigo snake, gopher tortoise, and gopher tortoise burrows, as well as other sensitive environmental issues and permit requirements.

Finally, the Eastern indigo snake (as well as other federally listed and state listed plant and animal species) are discussed during annual environmental awareness training for ROW maintenance personnel.

The table that follows compares the PEF protection measures (training and pamphlets) to the U. S. Fish and Wildlife Service (USFWS) Standard Protection Measures for the Eastern indigo snake (as modified in the USFWS-to-Progress Energy letter of October 28, 2008). As indicated in the table and described above, PEF training and training materials follow USFWS guidelines and PEF's protection measures provide the same level of protection as those recommended by the USFWS.

Comparison of USFWS Standard Protection Measures for the Eastern Indigo Snake to Those of Progress Energy

USFWS Standard Protection Measures	***Progress Energy Protection Measures***
An eastern indigo snake protection/education plan shall be developed for all maintenance personnel to follow. Pertinent details are below.	*The Progress Energy protection/education plan consists of initial and annual training.*
1. Include educational materials such as posters, videos, pamphlets, and lectures. *2. Informational signs are not necessary for a trained crew unless more than three individuals are working in the same area for more than one day.* *3. All subcontracted maintenance personnel must have received the training or a sign must be placed every 100 linear feet on the ROW; the signs must be in a language that all personnel can read, and must contain:* *a) A color photo of the Eastern indigo snake.* *b) A description of the Eastern indigo snake, its habits, and protection under Federal law.* *c) Instructions not to injure, harm, harass or kill this species; and a description of the legal restrictions on take and potential legal consequences for take.* *d) Directions to cease clearing activities and allow the Eastern indigo snake sufficient time to move away from the site on its own before resuming clearing.* *e) A telephone number to report dead Eastern indigo snakes.*	*1. Training consisting of lectures and pamphlets is provided.* *2. ROW maintenance activities do not typically occur within a given area for more than one day, so signs are not typically applicable.* *3. All ROW maintenance personnel receive training on Eastern indigo snakes. Signs are not posted (see above), but two educational pamphlets (in Spanish and English) are provided to maintenance personnel.* *a) The pamphlets include color photos of the Eastern indigo snake.* *b) A description of the Eastern indigo snake, its habits, and protection under Federal law are provided in the pamphlets.* *c) The pamphlets include instructions not to injure, harm, harass or kill this species, and include a description of legal restrictions on take and potential legal consequences for take.* *d) The two pamphlets direct personnel to stop work upon seeing an Eastern indigo snake, and wait until it leaves the area before resuming work.* *e) The pamphlets provide telephone numbers of Progress Energy personnel to be contacted to report dead or live Eastern indigo snakes; Progress Energy personnel will then contact USFWS.*
If not currently authorized through an Incidental Take Statement in association with a Biological Opinion, only individuals who have been either authorized by a section 10(a)(1)(A) permit issued by the Service, or by the State of Florida through the Florida Fish Wildlife Conservation Commission (FWC) for such activities, are permitted to come in contact with an Eastern indigo snake.	*As indicated in the two pamphlets, maintenance personnel are not to handle, harm, harass, or have any contact whatsoever with an Eastern indigo snake. This information is also emphasized during annual training of ROW maintenance personnel.*

(1) USFWS, 2004. Standard Protection Measures for the Eastern Indigo Snake, available at www.fws.gov/northflorida/IndigoSnakes/20040212 gd EIS Standard Protection Measures.pdf, as modified by letter of October 28, 2008 to James W. Holt, Progress Energy, Crystal River Nuclear Plant.

THREATS AND LEGAL PROTECTION:
The Eastern Indigo Snake is listed as a threatened species by both the U.S. Fish and Wildlife Service (50 CFR 17.11) and the Florida Fish and Wildlife Conservation Commission (68A-27.004 Florida Administrative Code). The primary cause of decline of Indigo Snake populations is destruction and fragmentation of the habitat it occupies. Indigo Snakes were also once heavily collected for the pet trade, but protection under the Endangered Species Act has largely eliminated the threat.

The 'Taking' of Indigo Snakes is prohibited by the Endangered Species Act, as amended, without a permit from the US Fish and Wildlife Service. The USFWS defines 'Take' as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. Penalties for violation of the Endangered Species Act are a maximum fine of $25,000 for civil violations and a maximum fine of $50,000 and/or imprisonment for up to ore year for criminal violations, if convicted. Penalties for violations of Florida Law prohibiting the 'Take' of Indigo Snakes are maximum fines of $500 and/or 60 days imprisonment for the first offense. Stiffer penalties are imposed for additional violations.

Watch Out For INDIGO SNAKES

Progress Energy

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Progress Energy

Indigo Snakes

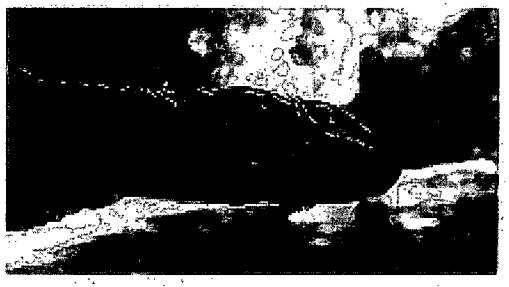
IF YOU SEE AN INDIGO SNAKE in the area that is being cleared, is under construction, or where the snake may be in danger:

1. Stop work immediately until the snake has safely left the area.

2. Report the snake immediately to your Supervisor, and,

3. Contact the site environmental biologist or Wayne Richardson with Progress Energy at 727-330-0637 to report the observation. Progress Energy will request information about where and when the snake was observed and forward the information to the Fish and Wildlife Service and other agencies, as appropriate.

DESCRIPTION: Indigo Snakes may grow large (over 8 feet in length), are heavily bodied and are glossy black. Indigo Snakes frequently have red or orange coloration under the chin. When approached or disturbed, this snake typically is not aggressive and will attempt to crawl away from the disturbance. Indigo Snakes rarely bite but should not be captured or handled without authorization



from the U.S. Fish and Wildlife Service or Florida Fish and Wildlife Conservation Commission.

SIMILAR SNAKES: The only other solid black snake occurring in Florida is the Black Racer, typically much smaller and thinner than an Indigo Snake. The chin of the Black Racer is white, as compared to the dark or reddish chin of the Indigo Snake. Black Racers will bite repeatedly if restrained.

LIFE HISTORY: Indigo Snakes may occur in almost any type of natural habitat. During the summer months, they are frequently found near wet areas. Indigo Snakes frequently take refuge in gopher tortoise burrows, particularly during the winter months. The

Killing, harming, catching, or molesting Indigo Snakes is prohibited by the federal Endangered Species Act and is punishable by fines and/or imprisonment, if convicted.

snakes also spend the winter in other underground retreats, such as stump holes.

Indigo Snakes eat a wide variety of prey, including frogs, toads, rodents, birds and other snakes (including rattlesnakes). Prey is overpowered and generally eaten alive. Indigo Snakes do not constrict their prey to kill it the way many other snakes do.

Female Indigo Snakes lay their eggs during May or June in a gopher tortoise burrow or some other type of area where the eggs will stay warm and moist. The eggs hatch after approximately 60 days. Hatching Indigo Snakes are similar to adults in appearance and are about 2 feet long.

What to do if you see one of these animals?

1. Stop work and contact your supervisor. Your supervisor will contact Progress Energy.
2. Do not try to handle, remove or harass the animal.
3. Wait until animal leaves area.
4. Burrow must be marked with 25 foot radius exclusion area – Progress Energy will determine.
5. Be aware of your surrounding – your work area could contain several other species of snakes.
6. Report any mortalities immediately to Progress Energy

Gopher Tortoise burrow
(note: Burrows are protected as well)

Link to all Florida Endangered and Threatened Species.
http://myfwc.com/imperiledspecies/pdf/Threatened-and-Endangered-Species-2007.pdf

Progress Energy Contacts:

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Progress Energy

Gopher Tortoise and Eastern Indigo Snake Protection Awareness

Florida Administrative Code
68A-27.004. Designation of Threatened Species; Prohibitions; Permits.
(1) The following species are hereby declared to be threatened, and shall be afforded the protective provisions specified.
(a) No person shall take, possess, transport, molest, harass or sell any threatened species included in this subsection or parts thereof or their nests or eggs except as authorized by specific permit from the Executive Director, permits being issued only for scientific or conservation purposes and only upon a showing by the applicant that the permitted activity will not have a negative impact on the survival potential of the species.

It's the Law!

Gopher Tortoise *Gopherus polyphemus*.
The gopher tortoise is a moderate-sized, terrestrial turtle, averaging 23–28 cm (9–11 inches) in length. The species is identified by its stumpy, elephantine hind feet and flattened, shovel-like forelimbs adapted for digging. The shell is oblong and generally tan, brown, or gray in coloration.

Habitat
The present range of the gopher tortoise includes much of the southeastern coastal plain of the United States from eastern Louisiana to southeastern South Carolina and throughout Florida. Gopher tortoises typically inhabit deep sandy soils in longleaf pine-scrub oak habitats with a canopy and understory sufficiently open to support the growth of low growing herbaceous vegetation. Grasses, legumes, and other plant materials are the main food items of gopher tortoises, but they have been known to eat small amounts of animal matter as well as indigestible items such as charcoal and pebbles. The gopher tortoise is highly colonial and spends a major portion of its lifetime, generally estimated at 40–60 years, in and around a burrow that it excavates. Burrows may be 5 to 10 feet deep and 20 or more feet long and may be utilized to varying degrees by other invertebrate and vertebrate species. Gopher tortoises may be active year round and breeding occurs from May to June over most of its range. The egg clutches are frequently laid at the mouth of the burrow with young hatching in August and September.

Eastern Indigo Snake *Drymarchon corais couperi* Eastern indigo snakes were federally listed as a threatened species on January 31, 1979, pursuant to the Endangered Species Act.

The eastern indigo snake is a large, docile, non-poisonous snake growing to a maximum length of about 8 feet. The color in both young and adults is shiny bluish-black, including the belly, with some red or cream coloring about the chin and sides of the head.

Habitat
This species is currently known to occur throughout Florida and in the coastal plain of Georgia. Historically, the range also included southern Alabama, southern Mississippi, and the extreme southeastern portion of South Carolina.

The eastern indigo snake seems to be strongly associated with high, dry, well-drained sandy soils, closely paralleling the sandhill habitat preferred by the gopher tortoise. During warmer months, this snake species also frequents streams and swamps, and individuals are occasionally found in flat woods. Gopher tortoise burrows and other subterranean cavities are commonly used as dens and for egg laying.

The eastern indigo snake has one of the largest home ranges (4.8 hectares during the winter and 97.4 hectares during the summer) of any native snake species. The indigo snake is a diurnal species that can be found in a variety of habitats, such as pine flatwoods, scrubby pine flatwoods, high pine, dry prairie, tropical hardwood hammocks, edges of freshwater marshes, forested wetlands, streams, and pasture. Eastern indigo snakes are prone to desiccation and almost always are found near wetlands or moist, humid protective cover such as gopher tortoise burrows, windrows, or decayed stumps or logs. Breeding occurs November through March with peak activity occurring in December. Eggs are laid in May with the hatchlings emerging from August through September.

Other protected species found near Gopher Tortoise burrows include the Florida Mouse *Podomys floridanus* **and the Gopher Frog** *Rana capito*. The Florida Mouse and Gopher Frog are listed as a Species of Special Concern and have a significant vulnerability to habitat modification, environmental alteration, human disturbance, or human exploitation which, in the foreseeable future, may result in its becoming a threatened species unless appropriate protective or management techniques are initiated or maintained; This is reason to why the Gopher Tortoise Burrows are protected as well.

Florida Mouse

Gopher Frog

4. T-17 – Provide information on the potential effects of cooling tower drift on terrestrial vegetation of the CR-3 site. Has deposition of particulates (salt drift) from cooling towers plumes resulted in any damage to vegetation or increased salinity of soils? Provide salt drift study reports for the years when helper towers were added. If no reports exist, then a statement that no such information exists should be provided.

Response:

The CR-3 salt drift studies focused on vegetation rather than soil salinity. Although there might be some increased salinity of soils as a result of cooling tower operation, such incremental increases would not be expected to be significant compared to naturally occurring soil salinity values. Additionally, the effects of soil salinization, as evidenced in vegetation, is not unlike what would be observed from salt drift settlement on leafy parts: leaf burn, plant wilt, stunted growth, and plant necrosis. As noted in the documentation provided, while some damage was recorded, no significant impacts to vegetation have occurred that are attributable to salt drift from the cooling towers.

The reports requested pertain to existing or public documentation, and the requested documentation is provided in a separate letter.

5. T-20 (Also AQ-1) – Provide all responses from correspondence with the State of Florida regarding threatened and endangered species. If no responses were received from the State, provide a statement to that effect.

Response:

Two letters regarding threatened or endangered species were received from the Florida Natural Areas Inventory (FNAI). These letters have been included in a separately-filed letter transmitting the response to the request for documents. No response to the correspondence sent to the Florida Fish and Wildlife Conservation Commission regarding the License Renewal project could be found.