Progress Energy

September 30, 2008

Ms. Mary Ann Poole
Director
Office of Policy and Stakeholder Coordination
Florida Fish and Wildlife Conservation Commission
620 South Meridian Street
Tallahassee, Florida 32399-1600

Subject: Progress Energy Florida Levy Nuclear Plant Units 1 and 2

Dear Ms. Poole:

This letter provides additional clarifying information in response to comments raised in your letter to the DEP Siting Coordination Office, dated August 27, 2008. Please note that the attachments referenced in the response below are being provided to FWC and DEP Siting Coordination Office only.

Comment 1

Progress Energy has provided the details of the "COLA Aquatic Sampling Workplan" dated March 2008 (RAI Number: LNP SCA RAI-I07). In the review of the workplan, it does not appear that benthic monitoring of seagrasses is planned or is being conducted. We request additional information on procedures that Progress Energy will employ to monitor impacts to seagrass beds. If no plan has been developed, we recommend that seagrass monitoring studies be incorporated into the workplan. Further, we recommend that these surveys should include: 1) seagrass species identification and location, 2) delineation of seagrass patch distribution if seagrass distribution is not continuous within the current and projected thermal plume, and 3) areal percent cover by species. We request that Progress Energy provide a map showing seagrass distributions by species (with densities or areal coverage) within the current and projected thermal plume.

Response to Comment 1:
The proposed LNP discharge will be a lower temperature than the existing CREC discharge and it will not cause or contribute to a greater thermal footprint in the zone of discharge at the end of the CREC discharge canal. As a result, the temperature of the combined LNP and CREC discharge is projected to be slightly lower than the temperature of the discharge from the existing CREC units. Discharge details are provided in the following table.

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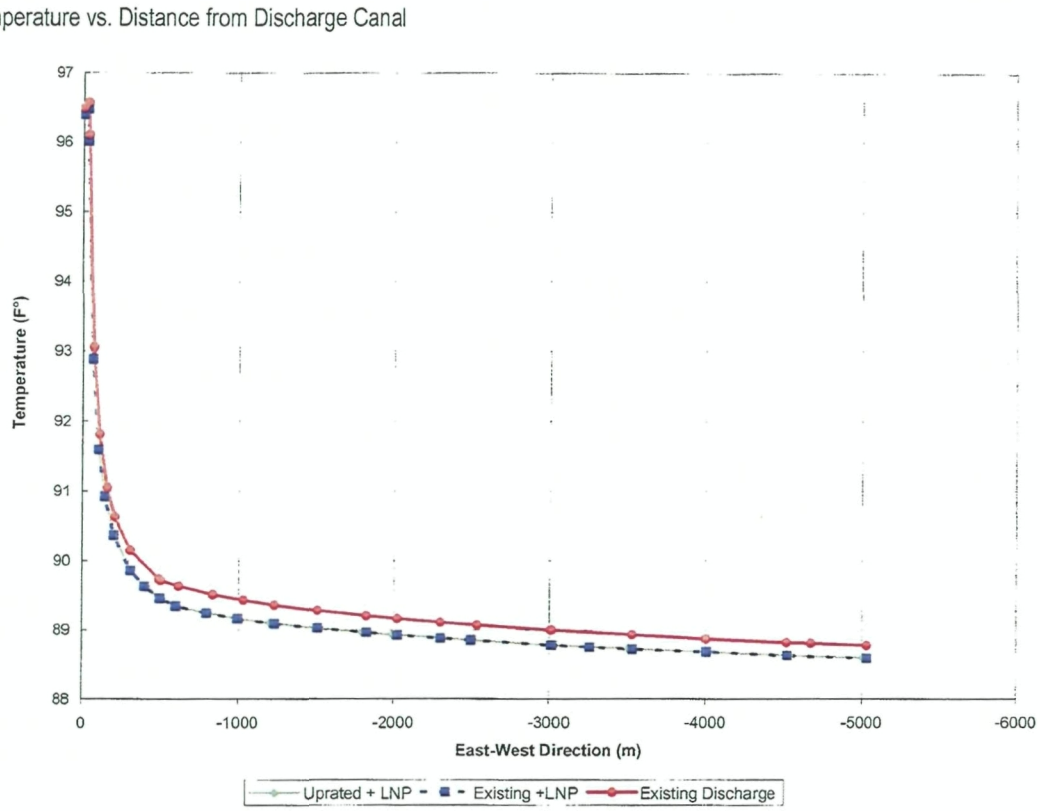
Summary of Cooling Tower Blowdown Discharges

Generating Units	Discharge Flow Rate (mgd)	Uprated Flow Rate (mgd)	Max. Temp. (°F)	COC
CREC 1, 2, and 3	1897.9	1878.15	96.5	1.0
CREC 4 and 5	88	N/A	96.5	1.5
LNP	87.5	N/A	94.4	1.5

COC = cycles of concentration

By adding the lower temperature LNP discharge, the overall temperature of the combined discharge plume is not expected to increase with distance. The 4 percent additional flow rate from LNP, with a lower temperature, will contribute to more dilution in the Gulf of Mexico. The existing CREC plume stratifies into a shallower surface layer because the higher temperature plume is slightly less dense than ambient Gulf waters. The more stratified existing condition results in more buoyant lateral spreading (i.e., the plume would be "squeezed" into a thinner layer), resulting in a plume area with less vertical mixing, covering a larger area. Adding the LNP discharge to the CREC discharge stream will cause the combined plume to be slightly denser because of lower temperature and slightly higher salinity. There will be slightly more vertical mixing under the proposed conditions, which will result in a more rapid reduction in temperature over distance and a smaller area of dispersion. The comparison between the existing and proposed discharges, as estimated with plume dilution modeling, indicates that the addition of the LNP discharge to the existing CREC discharge will have no significant or discernible effect on the thermal footprint of the CREC discharge, as illustrated in the following figure.



Monitoring of seagrasses has been previously conducted at CREC. These studies demonstrated that seagrass distribution varies seasonally and may be influenced by a number of factors unrelated to CREC. These studies, which include maps of seagrass distributions, are attached in the response to Comment 5. Because no additional thermal increases are projected, no additional seagrass monitoring is warranted.

Comment 2

The Aquatic Sampling Workplan indicates the protocols that will be used for "Icthyoplankton and Meroplankton" sampling and the "Chain of Custody" information. Based upon this information the taxonomic level of identification for icthyoplankton and meroplankton collections (e.g., family, genus, or species) is not clear. We request that the applicant provide information on the lowest (i.e, most detailed) level of identification for icthyoplankton and meroplankton that will be included in the laboratory analysis.

Response to Comment 2

Identification of icthyoplankton and meroplankton (shellfish larvae), along with fish eggs and other invertebrates, will be made to the lowest practicable taxon, the target being genus and species. For ichthyoplankton, the number of individuals for each taxon by life stage (for example, egg, yolk-sac larvae, post-yolk-sac larvae, or juvenile) will be identified and counted. Identification of meroplankton will be conducted in accordance with the protocol

provided in Attachment 1. Generally, identifications are to the genus and species level for those taxa that are of commercial value in later lifestages and to more general categories for other meroplankton taxa. Specimens damaged beyond recognition will be recorded as unidentified. Scientific and common names will follow standard scientific convention, as set forth in the Federal Integrated Taxonomic Information System (ITIS). Internal taxonomic quality assurance will be performed on 10 percent of all samples identified by individual taxonomists.

Final laboratory reporting will include, but not be limited to, the following: number of specimens counted for each taxon, notes on the condition of organisms, archive vial numbers, the type of plankton identified (meroplankton, ichthyoplankton, etc.), and the developmental stage, if known.

Comment 3

The Aquatic Sampling Workplan schedule also indicates that sampling will end in September 2008 for work in the Cross Florida Barge Canal. Please indicate the reasons why this will not continue over multiple seasons and years and what the future sampling schedule will be upon initiation and completion of the Levy Power Plant. Please indicate what mitigative measures will be undertaken based upon the impingement and entrainment sampling results.

Response to Comment 3

Aquatic sampling began in late fall in 2007 and field sampling is scheduled to end following the collection of ichthyoplankton/meroplankton samples in September 2008.
Data analysis of the collected samples will continue through December 2008 and early into 2009. A project sampling schedule is provided as Attachment 2. This sampling and analysis protocol will provide 1 year of seasonal ichthyoplankton/
meroplankton data and multiple season sampling of fish, motile crustaceans, and macroinvertebrates in the Cross Florida Barge Canal (CFBC) and nearshore Gulf waters. In addition, one set of samples of fish, macroinvertebrates, and motile crustaceans has been collected in the old channel of the Withlachochee River below the Lake Rousseau Dam to characterize the nature and extent of the freshwater biota in that river reach. Preliminary draft biological sampling program data available at this time are provided in Attachment 3. These data are considered draft but are representative and are provided as requested by FWC.

This level of sampling is adequate to characterize the seasonal differences in the potentially affected waters at a level commensurate with an evaluation of potential impacts of the proposed project to aquatic biota. It is expected that a sampling program will be established for the cooling water intake structure (CWIS) to monitor the effects, if any, of LNP operations. The terms and conditions of any such program will be established through the NPDES permit and associated conditions.

The impacts of the operation of the proposed CWIS are anticipated to be small, since operations of LNP will comply with the 316(b) Phase I Rule that requires use of a closed-cycle recirculating cooling system that uses non-contact cooling towers. The design of the CWIS is being performed to ensure that through-screen velocities at the intake structure will not exceed 0.5 foot per second (fps). The use of a closed-cycle cooling tower system will reduce potential entrainment by over 90 percent and the design of the low through-screen velocity intake system will assure minimal impingement effects. In addition, the discharge of the cooling tower blowdown to the existing CREC discharge will add less than 5 percent to the existing discharge flow stream and the maximum temperature of the LNP blowdown stream will be slightly less than the existing CREC discharge temperature. Attachment 4 summarizes some of the aquatic biota assessment methodologies that will be employed to evaluate potential project impacts.

For these reasons, Progress Energy does not anticipate the need for further mitigation.

Comment 4

The Aquatic Sampling Workplan indicates (Section 2.4.3) the protocols that will be used for collection and identification of the fish community. We request that the applicant identify fish (and invertebrate) species to the genus and species instead of the stated "genus and species (if practical)."

Response to Comment 4

The target for identification of fish captured is to genus and species. The fish collection equipment described in Section 2.4.2 (for example, gill net, minnow trap, trawl) can result in the capture of a range of specimen sizes and life stages. Very small immature specimens and damaged organisms may be difficult to positively identify to species; thus, in rare cases where there is unavoidable uncertainty, a specimen would be identified to the lowest practicable level, such as genus or family.

Comment 5

Progress Energy in their response to RAI Number: LNP SCA RAI-118 which states that seagrass monitoring studies in association with the Crystal River Energy Complex indicate that the seagrass beds are dynamic in nature. We request copies of the seagrass monitoring study reports that corroborate these statements. We also request that the applicant provide the estimated amounts of seagrasses that may be potentially affected by the elevated thermal plume from the discharge.

Response to Comment 5

Copies of the seagrass monitoring study reports conducted in association with CREC are included with this response as Attachment 5. These reports include baseline information excerpted from 316 studies (Mote, 1985), 1993-1995 annual monitoring reports, a 2001 resurvey report (Coastal Seas Consortium, 2002), and a summary report by the Seagrass

Technical Advisory Committee (STAC; Florida Power Corporation). These reports document both between-year and seasonal variation in seagrass distribution. The STAC report also notes that a number of variables other than temperature may be influencing seagrass distribution.

As discussed in the response to Comment 1, the discharge of LNP blowdown to the CREC discharge canal is not expected to result in a combined discharge with a higher maximum temperature than the existing CREC discharge stream. Since the footprint of the combined discharge into the Gulf of Mexico is not expected to be larger than the footprint currently existing for CREC, seagrasses will not be significantly affected.

Comment 6

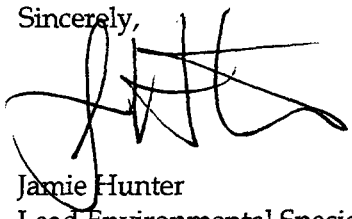
Progress Energy's response to RAI Number: LNP SCA RAI-115 concerning access by manatees to the intake structure states that a proposed trash rack will prevent manatee access. Please provide a complete description of the proposed trash rack system, including the type (brand) of trash rack proposed, the rack installation angle, and if a rake/rake gripper (or other moving element for cleaning or straining) is proposed as part of the mechanism, a description of the rake gripper, the size (in inches) of the rake gripper opening, the proposed descent velocity of the rake or other straining mechanism, and the proposed type of operation of the rake (automated or manual). Please reference any relevant figures from the application materials including drawings of the rack and the proposed location of the trash rack relative to the cooling water intake structure forebay.

Response to Comment 6

The details of the CWIS design are in development and will be supplied to the agency as the design is finalized. However, it is known that the fixed intake bar (trash) racks extending from above the water surface to the bottom of the canal will have a bar spacing of no more than 4 inches between vertical bars. This spacing will provide adequate protection for manatees. The projected velocities at the bar racks will be no greater than approximately one-half of the Phase I requirement for "less than 0.5 fps through-screen velocity "and, depending on the finalized forebay size and configuration, the approach velocities at the bar racks could be less than the projected 0.25 fps. These low design velocities and bar rack widths will allow for any manatee encounters with the CWIS to result in an easy escape without injury.

We appreciate your review of these responses and would welcome the opportunity to resolve any additional questions. Please contact me if you have any questions or require additional information. Thank you.

Sincerely,



Jamie Hunter
Lead Environmental Specialist

Progress Energy Florida

Enclosure - Disk with Attachments

cc: see attached list

Progress Energy

September 30, 2008

Mr. David Connolly
Principal Planner
Withlacoochee Regional Planning Council
1241 SW 10th Street
Ocala, Florida 34471-0323

Subject: Progress Energy Florida Levy Nuclear Plant Units 1 and 2

Dear Mr. Connolly:

This letter provides additional information in response to comments raised in your letter to the DEP Siting Coordination Office, dated August 26, 2008.

Comment 1:
Comment Number VIII.2 does not specify whether proposed radiological monitoring will include routes utilized for the transportation of low-level and high-level radioactive wastes. The question of whether monitoring will occur along radioactive waste transportation routes is independent of mode choice. Tables 3.8-1 to 3.8-12 detail radioactive exposure levels resulting from transportation of radioactive waste. Should monitoring of radioactive waste transportation routes not occur, what assumptions and information sources then become necessary to support the validity of data contained in Tables 3.8-1 to 3.8-12?

Response to Comment 1:
The Levy Nuclear Plant (LNP) Environmental Report (ER) Section 3.8 (Site Certification Application [SCA] Volume 9) provides an analysis of the transportation of radioactive material.

The U.S. Nuclear Regulatory Commission (NRC) evaluated the environmental effects of transportation of fuel and waste for light water reactors and found the impacts to be small and not detectable. The NRC analyses provided the basis for Table S-4 in 10 Code of Federal Regulations (CFR) 51.52, which summarizes the environmental impacts of transportation of fuel and radioactive wastes to and from a reference reactor.

Transportation of radioactive materials must comply with the U.S. Department of Transportation (DOT) requirements as specified in 49 CFR 173, "Shippers-General Requirements for Shipments and Packagings," Parts 401 to 477. Monitoring is not required along the route if DOT requirements for the shipment are met and calculated doses are less than those allowed by 10 CFR 20, Part 1301, "Dose Limits for Individual Members of the Public."

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The objective of the regulations is to protect people and the environment from the effects of radiation during the transport of radioactive material. The fundamental principle applied to the transport of radioactive material is that the protection comes from the design of the package, regardless of how the material is transported.

To ensure compliance with the requirements of 49 CFR 173, shipments are required to be monitored for their radiological conditions at the shipping facility prior to being shipped. The shipment is once again surveyed at the receiving facility to ensure no changes occurred during the course of the shipment.

Comment 2:
Based on explanation given by the *Revised Conceptual Wellfield Layout and Evaluation.*., describe and identify long-term and permanent aquifer system drawdown impacts resulting from normal and maximum water use on-site? That technical memorandum also summarized drawdown water level impacts on wetlands when water inputs are at their highest. What will impacts be when this is not the case or during sustained peak water use? Would this hinder intended on-site mitigation of wetland impacts? Please describe in greater detail. Furthermore, is it possible to provide a numerical value, as determined by model or otherwise, establishing and quantifying impact to discharge rates of regionally significant first and second magnitude natural springs?

Response to Comment 2:
Surficial and Floridan Aquifer Drawdown
Groundwater impacts resulting from the LNP wellfield withdrawals were simulated using the Southwest Florida Water Management District (SWFWMD) DWRM2 Regional model. The model was run for long-term average day withdrawals and for short-term maximum week withdrawals. The simulated drawdown contours were presented in *Responses to Comments on Levy Nuclear Plant Units 1 and 2 Site Certification Application for Power Plant and Associated Facilities*, dated August 2008, Comment Number VII.A General Comment (LNP SCA RAI-122) in Exhibits 12, 13 and 17 of the Technical Memorandum. Since the anticipated maximum pumping rate may occur during facility maintenance for about 1 week per year, there are limited additional impacts to the surficial aquifer when compared with the long-term average pumping rate; therefore, no exhibit is provided for this scenario.

Using these pumping scenarios, the drawdown at the LNP property boundary in the Floridan aquifer will be less than 0.5 foot for average day pumping and less than 1.5 feet at the maximum week rate. The surficial aquifer will have less than 0.4 foot of drawdown at the property boundaries under both average day and maximum week pumping conditions.

Drawdown Impacts to Springs
The nearest springs to the LNP site are located about 2.5 miles northwest of the LNP site. Little King and Big King springs are fourth magnitude springs and are shown in Exhibit 1 of the Technical Memorandum referenced above.

The model cells representing Big King and Little King springs discharge at a rate of 5.77 million gallons per day (mgd) without LNP wellfield withdrawals. With the LNP wellfield pumping, the simulated discharge from the model cells representing Big King and Little King springs is reduced by 0.06 mgd or approximately 42 gallons per minute (1.0 percent of

total spring flow). This level of change is not expected to result in quantifiable impacts in the springs.

The nearest first or second magnitude springs and their distance from the site include Rainbow Springs (11 miles), the springs around Kings Bay (12 miles), and Homosassa Springs (19 miles). None of these springs are close enough to the site to be included in the Telescoped Refined Mesh (TRM) groundwater model that was extracted from the SWFWMD DWRM2 model. Since the simulated impacts modeled for Big King and Little King springs, which are located 2.5 miles from LNP, were minimal, any impacts on the more distant springs will not be measurable.

Surficial Aquifer Drawdown and Wetland Impacts
As described in the Technical Memorandum referenced above, the simulated drawdown in the surficial aquifer is greatest in the immediate vicinity of the Floridan aquifer supply wells and diminishes with distance from the wells. The supply wells will be positioned in areas away from wetlands to the extent possible based on property boundaries and facility layout. The wellfield will be located away from areas intended for wetland mitigation inside the property boundaries; therefore, no constraints are expected on the use of those areas for mitigation. The wetland mitigation areas and maps are under development and the simulated impacts to the surficial aquifer are being considered when designating these areas.

In accordance with the SWFWMD Basis of Review for Water Use Permits, withdrawal of water must not cause unacceptable adverse impacts to environmental features, such as surface water bodies, protected species habitat, and wetlands. Lacking permanent surface water bodies or significant protected species habitat, the predominant environmental features of concern on the LNP property are wetlands.

Progress Energy Florida, Inc. (PEF) is continuing to work with SWFWMD to develop strategies that minimize potential effects on wetlands from surficial aquifer drawdown, such as alternative wellfield layouts, locations, pumping rates, well spacing, and wetland monitoring. The resulting wellfield plan will be in compliance with the SWFWMD Basis of Review.

Comment 3:
Staff's question regarding conservation of water resources (VIII.1) was referred to the applicant's response to question VII.G.2. Despite the fact that the electrical power generation is by definition a process which consumes water resources, the response is as follows, "Water conservation is inherent in the LNP system design." Does this mean the applicant has no plans to implement water conservation strategies in the design phase or over the life cycle of the plant? Or what measures might be taken to increase the efficiency of plant water use, and what criteria would guide a decision to make such a change once the plant is in operation?

Response to Comment 3:
Efforts to minimize water consumption have been and will continue to be incorporated into the design elements of the project. In fact, approximately 99 percent of all plant water use will be non-potable salt water, thereby conserving freshwater resources. The basic design of

the Westinghouse AP1000 reactor allows for use of non-potable salt water as the source for cooling water, while freshwater is required for the lower volumes of service water. In addition, ancillary components of the project, outside of the AP1000-certified design, have been designed to minimize the quantities of freshwater required for operation of the facility. As the project continues through the final design, construction, and operational phases, best management practices to minimize or further reduce the need for fresh groundwater will be employed. It is expected that the SWFWMD will, as part of their authorization to use groundwater at the site, impose requirements to review periodically and implement, when feasible, additional water conservation strategies.

Comment 4:
Comment Number VII.G-2 states that the applicant will use the lowest quality water to achieve operation of the proposed use. The applicant responds that no regional wastewater system exists to function as a source of reclaimed water supply. However, a regional wastewater system is planned and will be implemented at the inter-jurisdictional level as a joint public facility through individual local governments' comprehensive planning processes. What modifications, changes or other actions are necessary during the site planning phase of development so that the applicant can commit to accepting reclaimed water to be utilized to the maximum extent when available?

Response to Comment 4:
The project's current design must be based on having a consistent and reliable source of water to support the operation of the facility. Currently, there is no regional wastewater system or reclaim water supply in place that can be appropriately considered in the design of the project. Should such a system/supply be developed in the future, it will be evaluated, based on its technological and economical feasibility, for incorporation into the facility design. As noted in the response to Comment 3, it is anticipated that a periodic review of alternative water supply sources will be required by SWFWMD as part of their water use authorization.

Comment 5:
Section 5.2 of the Environmental Report discusses the total water-related impacts stemming from plant operation. Section 5.3 of the ER covers impacts related to the use of cooling water to support plant operations. Section 5.3.1.2.1 of the ER asserts that the upper portion of the Florida Barge Canal may experience an increase in salinity owing to cooling systems intake, while Section 5.3.2.2 states coastal waters in proximity to the point of blowdown discharge will be impacted by increased levels of chemical contaminants. Applicant response in Comment Number VIII.3 suggests that salinity content in cooling water discharge will be elevated.

Section 5.2.2.2 discusses the salinity impacts that could result from intake of water which are currently the subject of study. When will such findings be available as a supplement to ER? That same section does not provide equivalent detail on the possible effects of increased salinity owing to cooling water discharge. Text in that section reads as follows, "Studies on the impact on the Gulf of Mexico from existing CREC discharges have been performed since the 1980s." Given the quantity of information available, define

specifically the range of impacts that could result from increased salinity content in cooling system discharge waters. How will monitoring of cooling system discharge, as outlined in Section 6.3.4.4, be structured to reveal adverse impacts to aquatic ecosystems?

Response to Comment 5:
The LNP intake is to be located in the Cross Florida Barge Canal (CFBC) and the discharge will occur at the Crystal River Energy Complex (CREC). The LNP discharge will be commingled completely with the existing CREC discharge before discharging to the Gulf of Mexico. The commingled discharge will be subject to the same monitoring and temperature permit limits as CREC.

The water quality in the CFBC is being sampled and analyzed approximately every quarter and the results from four quarters over the past year will be available by early 2009. The results of the sampling and analysis of the CFBC's water quality indicates that the water in the canal is generally saline over its entire length, including the water adjacent to the locks. Measurements taken to-date also indicate that the water in the canal is highly stratified with denser, more saline waters underlying less saline water near the surface. Currently, the water near the lock is relatively stagnant, typical of dead-end systems with little flushing. The placement of the LNP intake structure at the proposed location and the withdrawal of water will generate a small current in the CFBC (estimated at approximately 0.07 to 0.09 foot per second). The characteristics of water in the canal are not expected to change significantly; however, it is expected that the increased flow of water in the canal will improve the quality of the biotic environment.

Intake water for the LNP circulating water system will be recycled until evaporative losses require blowdown to be discharged to keep the total dissolved solids concentrations within the operating parameters. The number of cycles of concentration (COC) for the LNP cooling system will be approximately 1.5 during normal operations, which means that the salinity in the discharge will be 1.5 times higher than what it is in the intake water. Table 1 displays the known or expected discharge characteristics for each of the generating units at CREC and LNP. CREC Units 1, 2, and 3 use once-through cooling (COC=1.0), and those three units represent greater than 96 percent of the existing discharge flow rate at CREC. LNP 1 and 2 will have similar characteristics to CREC Units 4 and 5 in terms of flow rates and the use of evaporative cooling, with a COC of approximately 1.5. All CREC units combined have a maximum combined discharge temperature limit of 96.5°F at the end of the CREC discharge canal, while the LNP units are expected to have a maximum discharge temperature of 94.4°F, approximately 2.1°F lower.

Table 1. Summary of Cooling Tower Blowdown Discharges

Generating Units	Discharge Flow Rate (mgd)	Max. Temp. (°F)	COC
CREC 1, 2, & 3	1897.9	96.5	1.0
CREC 4+5	88	96.5	1.5
LNP	87.5	94.4	1.5

COC = Cycles of Concentration

The salinity of the LNP intake water was assumed to be 24 practical salinity units (psu, which is equivalent to parts per thousand [ppt]) based on the values previously used for the plume modeling conducted for the CREC Final Report 316 Study (Stone & Webster Engineering Corporation, 1985). The estimated salinity of the LNP discharge stream was calculated by multiplying the salinity of the intake water (24 psu) and the COC (1.5) for each scenario (see Table 2). The warmest observed monthly average water intake temperature of 87°F was considered to be the ambient temperature of the intake water. This value was based on available Discharge Monitoring Reports (DMRs) data (January 2003 through February 2007) for the CREC facility.

Table 2. Estimated Salinity of Cooling Tower Blowdown Discharges

Generating Units	Discharge Flow Rate (mgd)	Discharge Temp (°F)	Discharge Salinity (psu)	Average COC
Existing Units 1-5	1985.9	96.5	24.54	1.022
Existing Units 1-5+LNP	2073.4	96.4	25.02	1.042

COC = Cycles of Concentration

Combining the LNP discharge stream with the CREC discharge stream will not increase the overall temperature with distance. In fact, the 4 percent additional flow rate from LNP, with its lower temperature, will contribute to more dilution in the Gulf of Mexico. The existing CREC plume stratifies into a shallower surface layer because the higher temperature plume is slightly less dense than ambient Gulf waters. The more stratified existing condition results in more buoyant lateral spreading (that is, the plume would be "squeezed" into a thinner layer), resulting in a plume area with less vertical mixing, covering a larger area. Adding the LNP discharge to the CREC discharge stream will cause the combined plume to be slightly denser because of lower temperature and slightly higher salinity. As a result, there will be slightly more vertical mixing under the proposed conditions, which will result in a more rapid reduction in temperature over distance and a smaller area. The comparison between the existing and proposed discharges, as estimated with plume dilution modeling, indicates

that the addition of the LNP discharge to the existing CREC discharge will have no significant or discernible effect on the thermal footprint of the CREC discharge.

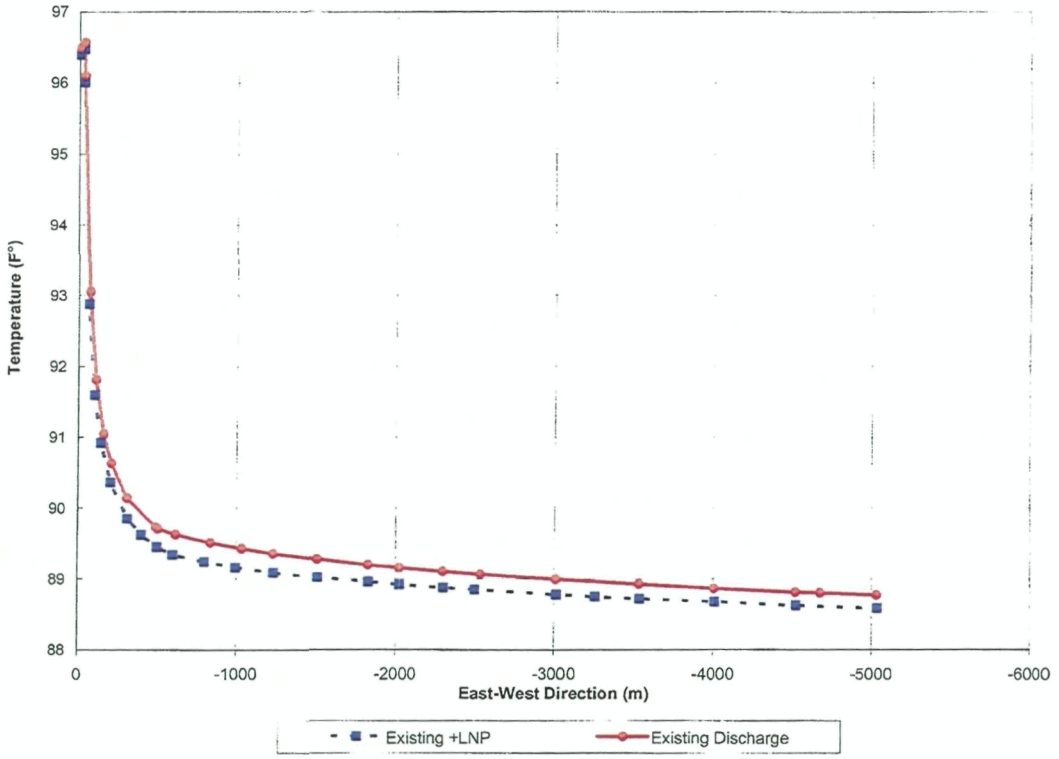
As shown in Table 2, the addition of LNP blowdown to the CREC discharge will increase salinity at the point of discharge by less than 0.5 psu. Beyond the point of discharge, mixing will rapidly make it infeasible to discern or monitor any increases attributable to LNP. Even at the point of discharge, the salinity increase is quite small in relation to natural salinity variation in this estuarine area. No salinity impacts attributable to LNP are expected.

Comment 6:
Section 5.3.2.1 identifies that discharge for the Levy nuclear plant will equal an additional 81 million gallons per day of heated water. As such, the Levy Nuclear Plant discharge represents a significant increase in cumulative heat energy that will require additional mitigation. Average temperature may or may or may not measurably decrease, but how will more heated effluent affect other physical properties capable of producing impact? What additional control technologies could yield beneficial mitigation of impact to regionally significant waters, fisheries and aquatic ecosystems? What other options exist outside of control technology to reduce the impact of increased heat discharge flow?

Response to Comment 6:
The change in the heat load at CREC due to the addition of the LNP discharge is not significant (that is, only a 2.3 percent increase) when compared with CREC's existing operations. No impacts to other physical properties resulting from LNP heat loading will occur. The cooling system to be used at the LNP facility is considered to be the best available technology and additional controls, such as the helper cooling towers, are in place at CREC to maintain the discharge within permitted limits. Since there is no discernable temperature increase or expansion of the thermal footprint, additional control technologies or the employment of other options is not necessary.

Please refer to the response to Comment 5 for background information on the LNP discharge and the expected combined flow characteristics at the CREC discharge canal. Combining the lower temperature LNP discharge with the CREC discharge is not expected to increase the overall temperature of the combined discharge plume with distance. In fact, the 4 percent increase in flow volume from LNP will result in more dilution of the thermal plume. The comparison between the existing and proposed combined discharge streams, as estimated with plume dilution modeling, indicates that the addition of the LNP discharge to the existing CREC discharge will have no significant or discernible effect on the thermal footprint of the CREC discharge, as illustrated in the following figure.

Figure1. Temperature vs. Distance from Discharge Canal



Comment 7:

In Comment Number VIII.3, the applicant responds that ambient air quality standards for PM-10 do exist but that the quantity of annual emissions does not justify a monitoring program because significant or measurable impact is not expected. If no monitoring is to occur, then how can forecast pollutant levels be conclusively verified? Moreover, residual particles are frequently chemically reactive, therefore requiring observation to establish scope of primary and secondary impacts.

Response to Comment 7:

The projected emission rate of PM-10 from the LNP facility is only 6.8 tons per year (tons/yr) (that is, 5.6 tons/yr from the cooling towers and 1.2 tons/yr from diesel-powered emergency equipment). These emission estimates are based on published and generally accepted emission factors that are applicable to the type of equipment being proposed for the LNP facility. A summary of the emission rate calculations is provided in the Prevention of Significant Deterioration (PSD) Permit Application that is included as Appendix 10.2.5 to the LNP SCA. LNP's proposed level of PM-10 emissions is considered to be insignificant and therefore exempt from any type of ambient or source monitoring requirements, based on the fact that they will be less than the regulatory definition of "significant emission rate" for PM-10, which is 15 tons/yr. Facilities that emit pollutants below this level are not subject to dispersion modeling or source monitoring requirements because they are not expected to

have a significant impact on ambient air quality at any location. It is noted that PEF has applied to the Florida Department of Environmental Protection (FDEP) for an Air Quality Permit to construct and initially operate the LNP facility and it will comply with all applicable regulatory requirements, as well as any conditions that are stipulated in the final permit.

With regard to the potential impact of residual particles that will be emitted from the facility, the majority of the particulate emissions will be emitted from the cooling towers as common salt particles contained in cooling tower "drift" droplets. Dispersion modeling studies performed by PEF and described in the LNP SCA demonstrated that impacts attributable to particulate matter emissions and salt deposition would be minimal and below any vegetative impact thresholds. It is also noted that a comprehensive salt drift deposition study was conducted at the nearby CREC to evaluate the physical impacts of salt deposition on vegetation surrounding the CREC from that facility's natural and mechanical draft cooling towers. This long-term study was conducted from 1981 through 1995 as a condition of the facility's NPDES and PSD permits. The results of the study demonstrated that there were no significant impacts to vegetation in the area surrounding the plant resulting from cooling tower operation. In March 1996, the FDEP concluded that there were no significant impacts to vegetation due to salt drift from the plant and authorized the facility to discontinue the study. Further discussion of this is provided in PEF's response to Comment Number V.2 (LNP SCA RAI-103) in the *Responses to Comments on Levy Nuclear Plant Units 1 and 2 Site Certification Application for Power Plant and Associated Facilities*, dated August 2008.

Comment 8:
Without defining terms, Comment Number VIII.3 states that cooling tower design minimizes emissions levels and that control technology would not function to limit particulate matter emissions. Has the applicant exhausted all non-control technology approaches to minimization of adverse air quality impacts?

Response to Comment 8:
PEF considered alternative cooling approaches that could have resulted in further reductions in air emissions for the LNP facility. However, PEF rejected these alternative approaches because of their potential to increase environmental impacts and costs to ratepayers. These alternatives included dry cooling towers (no PM-10 emissions since no water would be used for cooling) and once-through cooling towers (lower emissions due to fewer cycles of concentration in the cooling towers). Dry cooling, which does not work well in humid environments, would have imposed a parasitic power load and reduced plant efficiency and increased costs, while once-through towers would have required significantly more water. The PM-10 emissions from the proposed LNP facility are already very low, and no significant or measurable adverse impact on ambient air quality is expected at any location due to the operation of the proposed cooling towers. Given the minimal emissions and the insignificant impacts associated with the proposed system, the use of the proposed cooling tower design is the most appropriate design for LNP.

Comment 9:
The US Environmental Protection Agency (EPA) identifies power plants, and specifically liquid droplets, as potential sources of *fine particle* emissions. Fine particle emissions may be defined as a subset of PM-10 emissions, which measure 2.5 microns or smaller in diameter (PM2.5). These particles have been identified as a source of human health risk. Do forecast, PM2.5 emissions measurably affect air quality attainment or other standards within the region? As proposed, what impacts could result from airborne residual PM2.5?

Response to Comment 9:
Since PM-2.5 emissions are a subset of PM-10 emissions, the LNP PM-2.5 emission rate will be less than the proposed PM-10 emission rate of 6.8 tons per year (tons/yr). Regardless of whether the emissions are PM-10 or PM-2.5, the total combined emissions are estimated to be less than 6.8 tons/yr, which is well below the PM-10 significant emission rate of 15 tons/yr, as discussed in the response to Comment 7. FDEP and EPA consider the PM-10 significant emission rate threshold of 15 tons/yr to apply also to PM-2.5 emissions. Given the very low level of expected emissions of PM-10 and PM-2.5, no significant ambient air quality impacts are expected from either pollutant. The area is presently in attainment of all ambient air quality standards and those designations will not change as a result of the operation of the LNP facility.

We appreciate your review of these responses and would welcome the opportunity to resolve any additional questions. Please contact me if you have any questions or require additional information. Thank you.

Sincerely,

Jamie Hunter
Lead Environmental Specialist

cc: see attached list

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SITE CERTIFICATION APPLICATION FOR
POWER PLANT AND ASSOCIATED FACILITIES

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