

**UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION**

Before the Atomic Safety and Licensing Board

In the Matter of	)		
	)	Docket Nos.	52-029-COL
Progress Energy Florida, Inc.	)		52-030-COL
	)		
(Combined License Application for	)		
Levy County Nuclear Plant, Units 1 and 2)	)	ASLBP No.	09-879-04-COL

**PRE-FILED REBUTTAL TESTIMONY OF PETER G. HUBBELL RESPONDING TO MR. STILL'S  
CRITICISMS OF FLORIDA WATER MANAGEMENT DISTRICTS' WATER USE PERMITTING  
AND PROCESSES FOR PROTECTING WATER RESOURCES IN FLORIDA**

**Q1: Please state your name and business address.**

A1. My name is Peter G. Hubbell. My business address is 4260 W. Linebaugh Avenue,  
Tampa, Florida, 33624.

**Q2: Please state your employer and position.**

A2. I am a Principal and Senior Hydrologist for Water Resource Associates, Inc.  
(WRA)<sup>1</sup>. WRA is an environmental engineering firm located in Tampa, Florida,  
which I co-founded in 1997. WRA provides water resource engineering and  
planning; civil engineering; and environmental services throughout the United States;  
however, we primarily concentrate our work in Florida. Our clients include the  
Federal Government; State of Florida agencies; Regional Water Supply Authorities;  
Florida's water management districts; local governments; and various private

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<sup>1</sup> A list of acronyms and their meanings in my Pre-Filed Rebuttal Testimony is included as PEF801.

interests including developers, commercial, agricultural and industrial interests. My primary role at WRA is providing water resource planning services. This includes:

1. Population and water demand projections;
2. Analysis of availability of both traditional (groundwater) and alternative water supplies (surface water, desalination and conjunctive use of groundwater and surface water);
3. Reclaimed water feasibility analyses;
4. Water conservation and other demand management strategies;
5. Water use permitting;
6. Wellhead and Surface Water Resource Protection Area determination;
7. Wellfield adaptive management planning; and
8. Other related water supply planning tasks.

Most recently my focus has been on the Northern Planning Region of the Southwest Florida Water Management District (SWFWMD or District) on behalf of the Withlacoochee Regional Water Supply Authority (WRWSA or Authority). I personally serve as the project manager for all the water supply planning for the WRWSA and provide additional water resource technical assistance to the Authority.

Much of this work is proximate to the Levy Nuclear Plant (LNP) site. I am presently involved in several projects at the Crystal River Energy Complex (CREC), approximately eight miles to the south of the LNP site. My work at the CREC includes the review of water levels; water quality; groundwater pumpage for either water resource or environmental changes or trends; and the review and response to various conditions of the CREC Certification Conditions of Issuance and Water Use Permit. I am involved in the development of the annual report that is required to

address the potential for water quality and environmental impacts related to CREC wellfield pumpage. I have also been instrumental in the development of adaptive management strategies in the event that pumpage from the CREC wellfield is predicted to cause unacceptable water resource and/or environmental impacts.

**Q3: Please describe your professional qualifications and experience.**

A3: My professional and educational experience is summarized in the curriculum vitae provided in PEF802. I hold a Bachelor of Science Degree in Hydrology and Water Resource Management from the University of Maryland. I am a Florida Supreme Court Certified Mediator (FL Number: 9024 C).

The bulk of my professional career has been spent in Florida dealing with a variety of water resource issues on a statewide, regional and local level. I began working in Florida in 1978 for the SWFWMD as a Project Hydrologist in the District's Aerial Mapping and Floodplain Management Program. Within the span of 19 years, I progressed through the agency as Mapping and Floodplain Management Program Manager; Director of Resource Management (heading the agency's research and programmatic duties); Assistant Executive Director (responsible for the District's regulatory programs); and Executive Director. My roles at the District were both technical and administrative. As Assistant Executive Director, I was responsible for water use and environmental resource permitting, as well as the research conducted by the District and overall programmatic responsibilities. For my last nine years, as Executive Director, I managed the daily operations of the SWFWMD. I played a significant role in the development of water allocation strategies, the development of sustainable water resources, the introduction of alternative water supplies into southwest Florida, and introducing water conservation and aggressive water demand

strategies into the water allocation process for Florida's major water users in all major water use categories.

I was awarded a national award by the American Water Resources Association, the 1997 William C. Ackerman Medal for Excellence in Water Management. I was selected in 1991 by the Governor of Florida to Chair, Florida's "Bluebelt Commission" on Aquifer Recharge. I was a member of the National Research Council's Committee on Valuing the Nations' Groundwater – 1997. I am a Founding Member, Policy Council of the International Water Resource Network. I was a Board member of the Florida Conflict Resolution Consortium. I was a member of the Interstate Council on Water Policy. I am currently a member of the American Water Resource Association and the American Water Reuse Association.

My role as a certified mediator focuses on the mediation of water resource and other environmental disputes. I am currently on the Florida water management districts' list of mediators who specialize in assisting citizens with contentious issues dealing with these agencies. This has included disputes regarding permitting issues, property rights, and land acquisition, where the normal processes to reach satisfactory consensus have failed. I was also employed by the U.S. Environmental Protection Agency (USEPA) to assist in negotiating the Alabama / Coosa / Talapoosa and Apalachicola/ Chattahoochee/Flint River Basins Tri-State Compact between Alabama, Florida and Georgia. This is an ongoing dispute among the states relating to existing and proposed water withdrawals from these river systems and their impacts to downstream minimum flows and levels.

I am also a trained and experienced facilitator working with stakeholder groups to achieve consensus on proposed rules and regulations; technical analyses of water

related and environmental issues; strategic planning; and development-related projects that have potential impacts on neighborhoods and other parties. My technical background and experience, coupled with my training in mediation and facilitation, have been helpful on the many projects on which I have worked both at SWFWMD and WRA.

**Q4: What work have you done in connection with the LNP project?**

A4: Progress Energy Florida (Progress Energy) retained WRA's services in February 2012 to assist with the development of the proposed Environmental Monitoring Plan (EMP); Aquifer Performance Testing Plan (APT); and strategies for adaptive management in connection with the LNP proposed wellfield. My role in this assignment has been to review and critique the Technical Memoranda related to the EMP and APT that CH2M HILL had prepared for the LNP project. My review has included identifying techniques and strategies to strengthen the drafts from technical, administrative and regulatory perspectives. I have also reviewed the Technical Memoranda for clarity and document readability to ensure that various regulatory, technical and lay audiences could more readily understand their content.

The EMP is a critical part of the Water Use Permit (WUP) regulatory process at the SWFWMD and is required for all of the WUPs that fall within the Individual Permit threshold, which is 100,000 gallons per day (gpd) daily annual average. The EMP is the framework for monitoring the hydrology and ecology in and around the LNP wellfield that could potentially be impacted by the operation of the facility.

The APT is a key piece of the SWFWMD water allocation strategy. To ensure that the predictive analysis of wellfield drawdown is as accurate as possible, the Conditions of Certification (COC) issued by the State Siting Board in approving the

LNP Site Certification Application (SCA) (PEF004) require field testing of the Floridan Aquifer. The APT results will be compared to the groundwater model results submitted with the SCA, which predict aquifer drawdown based on aquifer characteristics imbedded in the SWFWMD District-Wide Regulation Model – Version 2 (DWRM2). The COC require that, if the aquifer characteristics (leakance or transmissivity) obtained from the APT test, when compared to the values of those characteristics predicted by the groundwater model results in the SCA, vary by 20% or more, Progress Energy must revise the groundwater model based on the APT results.

Adaptive management strategies are also an important component of the SWFWMD WUP process. The ability to manage a wellfield facility to offset any hydrologic and/or environmental impact related to pumpage is a coherent strategy for any large water user.

**Q5: What is the purpose of your testimony?**

A5: The purpose of my testimony is to address the Initial Pre-Filed Testimony of David Still (INT201R). Mr. Still lodges serious critical charges against the Florida water management districts' water use permitting and processes for protecting water resources in Florida. Progress Energy asked me to evaluate Mr. Still's charges and prepare rebuttal testimony.

My testimony defends the excellent stewardship by the SWFWMD of Florida's water resources in the region over which the SWFWMD has jurisdiction and the District's requirements and processes for protection of those water resources. I address a number of specific criticisms by Mr. Still of information on water resources described in the FEIS, including alternatives for fresh water supply, the COC, data

regarding existing water allocations, regional groundwater resource planning, minimum flow levels (MFL), and minimum aquifer levels. I also comment on use of integrated surface-groundwater computer models in connection with individual water use permit as implicitly recommended by Dr. Tim Hazlett (INT101R).

**Q6: Are you knowledgeable of the matters addressed by Mr. Still?**

A6: Yes, I am intimately knowledgeable of the matters addressed in Mr. Still's testimony, both from my previous experience as an employee of the SWFWMD and my current professional practice at WRA.

As mentioned, my 19-year career with SWFWMD included first-hand involvement with both the technical and regulatory aspects of the District. This included the development of programs to assess and analyze the water resources and environmental characteristics of the area within the SWFWMD's jurisdiction. It also involved the development and administration of most of the regulatory rules and programs that are currently in place today at the SWFWMD.

The relationship between groundwater and surface water withdrawals and changes to water levels, water quality, and the environment has been the most pressing priority at the SWFWMD since the early 1980s. The Florida Water Resources Act (1972) mandated to Florida's water management districts the responsibility of allocating water supply to all users through consumptive use water permitting. Early in their programs (the mid-1970s), the Florida water management districts inventoried existing water users, put existing users under a permitting structure, and began intensive data collection programs to help better understand and quantify water levels and quality.

Within the SWFWMD, significant water withdrawals in the Tampa Bay area to serve the populations of Hillsborough, Pasco and Pinellas Counties had been occurring since the late 1940s. Much of this water was developed by production wellfields in the inland counties (Hillsborough and parts of Pasco Counties) and the majority of the water was used by the coastal communities where water supplies were less abundant. As more wellfields were developed in these inland counties, impacts to water levels in wetlands and lakes and on flows to rivers were becoming evident. Anecdotally, the correlation between these impacts and increasing pumping rates was clear; however, the technical ability to prove the relationship in the 1970s and early 1980s was not fully developed. Water suppliers insisted that impacts were related to drought, development, and drainage that were occurring in the area and not related to drawdown caused by these production wellfields.

In the mid-1980s, while I was in charge of the scientific and programmatic functions of the District, the SWFWMD launched an aggressive program to better understand the hydrologic system in west-central Florida and the stresses that were causing unacceptable water resource and environmental impacts. This included a more comprehensive groundwater and surface water monitoring program; the metering of all water users; aquifer performance testing to gain a better understanding of the groundwater system and aquifer characteristics; and with the advent of groundwater modeling and greater computing power, developing the ability to correlate cumulative drawdown levels from wellfield pumpage to impacts on water resource and environmental features of the area.

In preparing this rebuttal testimony, I reviewed Mr. Still's Testimony (INT201R), his exhibits (INT202 – INT 216), sections in the Final Environmental Impact Statement (FEIS) (NRC001) relevant to my review of Mr. Still's Testimony, and the



Initial Pre-filed Testimony of Dr. Tim Hazlett (INT101R). I also reviewed documentation related to the Tampa Bay Water (TBW) Integrated Hydrologic Model in connection with my response to Dr. Hazlett's criticisms of the modeling recommended by the SWFWMD. I reviewed the COC (PEF004), as well as Technical Memoranda developed by CH2MHILL describing the EMP (PEF304) and APT (PEF304). . In addition, I reviewed relevant provisions in Chapter 373 of the Florida Statutes (including PEF311) and Florida Administrative Code water use regulations: Suwannee River Water Management District (SRWMD) Chapter 40B-2 and SWFWMD Chapter 40D-2 (PEF312) (including Basis of Review for Environmental Water Resource Permit Applications (PEF006)). Finally, I reviewed the SWFWMD MFL Priority List, and reviewed, and prepared as exhibits excerpts from, the Florida Department of Environmental Protection - Resource Inventory Data Base and Annual Reports, 2011 Appendix L (PEF803), and the Detailed Water Supply Feasibility Analysis, Withlacoochee River Water Supply Authority Phase II, April 2010 (PEF804).

**Q7: Do you agree with Mr. Still's characterization of the SWFWMD's processes for water use permitting, subsequent monitoring and mitigation requirements as "flawed state processes?" (INT101R, pp. 2-3, 10-19)**

A7: No. His characterization of the SWFWMD WUP program is not only inaccurate and misleading, but also disingenuous considering his tenure at the SRWMD. As outlined in my Answer 6, the SWFWMD has focused and prioritized its efforts for the last 30-years on developing and continually refining its water allocation strategies, creating a regulatory system that is recognized and acclaimed within the State of Florida and nationally for its effectiveness.

To put Mr. Still's comments in context, it is important to note that for 18 years he worked for and administered the SRWMD. In the last 35 years, the SRWMD's regulatory programs and tools for protecting water resources and the environment have not advanced as well as those in SWFWMD and other more developed Florida water management districts. Yet Mr. Still criticizes the SWFWMD WUP program in an unsubstantiated and misguided manner, notwithstanding the reputation of the outmoded SRWMD WUP program for its ineffectiveness.

The SWFWMD WUP process for both groundwater and surface water use is a very deliberate, consistent and comprehensive approach to water allocation and water resource and environmental protection. The WUP process is encompassed in Chapter 40D-2 of SWFWMD's Rules (PEF312) and is further developed in the guidelines for implementation contained in the Water Use Basis of Review (PEF006). The Water Use Basis of Review is a document to assist applicants in the permitting process by interpreting the WUP rules and what is required to meet SWFWMD standards for permit issuance.

The SWFWMD WUP process requires an applicant to demonstrate with reasonable assurance that an application will meet standards for permit issuance in five major areas:

1. Reasonable Demands: The applicant must demonstrate that the requested quantities are reasonable and beneficial and in the public interest. These demands must be based on "efficient" use of the resource, and requested quantities are tested against the highest standards of efficiency of use to ensure future water use in a conserving manner.

2. **Alternative Water Supply (AWS) Feasibility Analysis:** The applicant is required to demonstrate to the District the feasibility of offsetting all or part of the requested demand by AWS, including but not limited to surface water, reclaimed water, or desalination. The feasibility analysis requires the applicant to consider availability, cost and potential environmental and water resource impacts of utilizing an AWS source.
3. **Predictive Analyses:** The applicant is required to utilize the SWFWMD's DWRM2 or an equivalent approved groundwater model to simulate the projected drawdown in the aquifer system(s) caused by the groundwater withdrawal.
4. **Water Resource and Environmental Impact Analysis:** The applicant must demonstrate that the predicted groundwater drawdown will not adversely impact the water resource or environmental features of the surrounding area. The SWFWMD has developed standards for impacts to varying types of wetlands, lakes, MFLs, adjacent legal water users, and aquifer systems that meet the test for minimal impact or potential "harm" to the water resource or environment.
5. **Special WUP Conditions:** If the WUP is ultimately issued, the applicant must be prepared to address a set of special conditions that will be associated with the permit to ensure that what was contemplated through predictive modeling and analysis of potential impacts is verified. This includes:
  - a. **Metering of Water Use:** Water use is metered and reported to the District monthly to ensure that predicted water demand and actual water use are consistent.

- b. Environmental Monitoring Plans (EMP): The EMP specifies the exact monitoring required of the permittee of both the water resource and environmental systems in and around the withdrawal point(s). This can include the recording of precipitation data; monitoring of wetland systems; measuring both groundwater and surface water levels; and the collection of water quality data. This is generally developed into an annual report with an analysis of whether pumpage is having an adverse impact to either the water resource or environmental systems.
- c. Adaptive Management Plan: An adaptive management plan can include a list of management strategies that a permittee will be required to implement if the EMP annual reporting determines that negative trends to the water resource and/or the environmental systems in the area are occurring. This can include, but is not limited to, techniques such as greater efficiency of use; rotation of pumpage among wells; reconstruction of existing wells; dispersing pumpage by adding additional wells; and adopting an AWS to offset withdrawals.
- d. AWS Conditions: Standard AWS conditions require the permittee to continue to analyze the availability of AWS to offset the current permitted withdrawal of traditional water supplies. When and if AWS become economically and environmentally available, the permittee will be required to replace or offset the allocation by connecting to that source.

In contrast, the SRWMD's WUP process has been and remains a simplistic and unpredictable process that ignores many of the basic tenants of accepted water management regulatory principles. The SRWMD WUP application is a three-page

document that asks the applicant for basic information regarding the proposed use and how withdrawals are planned, but it does not require information from the applicant to demonstrate that proposed withdrawals are not harmful to existing legal water users, water resources of the area or the environment. The unpredictability of the SRWMD WUP process stems from a lack of standards of review, which in other Florida water management districts are provided by a Basis of Review document. A Basis of Review document is common amongst the Districts so that an applicant can understand how the agency actually implements its rules. The SRWMD has no such document, so the standards deemed appropriate for reasonable and beneficial use, impacts from withdrawals, efficiency of use, AWS feasibility, and other normal permitting criteria are not established and appear to be *ad hoc* decisions by the SRWMD.

**Q8: Please comment on Mr. Still's criticism of the adequacy of the consideration of alternative water supplies by Progress Energy and in the FEIS. (Int101R, pp. 7-9)**

A8: The requirement to analyze the availability and feasibility of AWS is a common condition found in the SWFWMD WUPs. The SWFWMD has been a leader in prescribing AWS projects and in many cases has played a major role in the co-funding for the planning, permitting and construction costs of these projects throughout its 16-county jurisdiction. These AWS projects have included: surface water withdrawals; aquifer storage and recovery systems; off-stream reservoirs for the capture of surface water; desalination plants; and reclaimed water projects.

In my experiences while in charge of the SWFWMD Permitting Program and as a consultant who regularly works with the District in acquiring WUPs for clients, the bar set for establishing the feasibility of potential AWS projects is very high. Mr.

Still's assertions regarding the availability of AWS to offset proposed LNP groundwater withdrawals are generalized and are exemplary of his lack of specific analysis of the subject in the Levy County area. In response to Question 16, Mr. Still asserts without evidence or analysis: "One excellent source of alternative supply *could* be the waste water flows from nearby communities." (INT201R. p. 7 (emphasis added)) Mr. Still did not address the actual availability of reclaimed water from "nearby" waste water treatment facilities (WWTF). This requires an analysis of the nearby communities' WWTF capacities, existing and projected wastewater flows, and how much reclaimed water has already been committed for beneficial reuse.

According to even a cursory analysis of the Florida Department of Environmental Protection (FDEP) - Resource Inventory Data Base and Annual Reports, 2011 Appendix L (PEF803), reclaimed water to offset LNP proposed groundwater withdrawals is not currently available from nearby WWTFs and will not be available for the foreseeable future.

1. Crystal River – The current WWTF capacity is 1.5 mgd and average daily flows are approximately 0.693 mgd. This total amount of reclaimed water and future increases in wastewater flow are committed to offset groundwater pumpage at the Progress Energy CREC. This project is a collaboration by the City of Crystal River, Progress Energy and the SWFWMD and is expected to be operational by 2014. (PEF803, p. L-3)
2. Yankeetown – Currently the WWTF capacity of the town is below the 100,000 gpd and is not reported by the FDEP.
3. Inglis - Currently the WWTF capacity of the town is below the 100,000 gpd and is not reported by the FDEP.

4. Dunnellon – The WWTF capacity of Dunnellon is 0.25 mgd with reported annual average flows of 0.15 mgd. These flows are currently committed to beneficial reuse. (PEF803, p. L-11)

Other AWS projects that have been studied by the WRWSA include surface water from the Withlacoochee River and desalination at the CREC. The Detailed Water Supply Feasibility Analysis, WRWSA Phase II, April 2010 (PEF804) calculated the cost of the delivery of water to population centers within the WRWSA area from two sources:

1. Withlacoochee River at Lake Rousseau - \$ 2.38/ 1,000 gallons (PEF804, p. 8-27); and
2. Seawater Desalination at CREC - \$4.27/1,000 gallons (PEF804, p. 9-12)

The relative costs of these alternatives proved to be too expensive for industrial use (these costs do not include transmission to LNP).

Mr. Still is incorrect. Alternative water supplies for LNP have been considered, including reclaimed water from local WWTFs. The alternatives were neither feasible nor economical.

**Q9: Is the COC requirement that Progress Energy submit an AWS Plan for the LNP project within 3 years of completion of site aquifer testing, which was found unreasonable by Mr. Still, consistent with Florida law and adequate to protect water resources if testing and monitoring indicated an AWS would be required? (INT201R, pp. 9 -10)**

A9: Chapter 373.016.4(a) of the Florida Statutes does not require an AWS Plan prior to WUP approval, contrary to what Mr. Still appears to be suggesting at INT201R, p.9. This is made clear in the COC – a legal requirement recommended by the SWFWMD and adopted by the State Siting Board in approving the LNP site. (PEF004) Because of the analysis required to develop an AWS Plan, it is appropriate to allow the applicant ample time for its completion.

In my professional opinion, a period of three years to develop the AWS plan after completion of aquifer testing is appropriate for a number of practical reasons. I have been actively involved in the development of AWS plans and it requires a comprehensive review of the availability of both traditional and non-traditional sources of water supply. AWS investigations have been important elements of long-range water supply planning that I have completed for the WRWSA; Lake Marion, and Pasco Counties, FL; the City of Cocoa, FL and Jacksonville Electric Authority.

AWS investigations take time and resources. The determination of whether an AWS is environmentally and economically feasible is complex and involves a number of considerations. These include the quantity, quality and reliability of the sources; the economics of the source or combination of sources to replace or augment the existing groundwater quantities; the permissibility of the sources; and public perception of the source chosen and how it will be developed. Accordingly, neither the Florida Statutes nor the SWFWMD require that the AWS Plan be developed at the WUP stage.

Q10: Does the SWFWMD issue permits for consumptive water uses from the Gulf of Mexico and Cross Florida Barge Canal (CFBC) Mr. Still suggests are required? (INT201R, p. 11.)



A10: No. Historically none of Florida's five water management districts, including the SWFWMD and the SRWMD, require permitting for seawater in their water use programs. It has been determined that because of the unlimited supply of seawater, withdrawals of this source will not have a detrimental impact to the resources under the District's jurisdiction. An example is the TBW Desalination Plant located in Hillsborough County. This desalination plant has a capacity of 25 mgd annual average and withdraws seawater from Tampa Bay. This plant was not required to obtain a WUP from either SWFWMD or the FDEP.

**Q11: Was it reasonable for the FEIS to have relied, in part, on the COC to ensure there would be no LARGE impacts to water resources from active dewatering? (INT201R, pp. 10-11.)**

A11: Mr. Still alleges in his response to Question 19 that "there is not enough information available in the Conditions of Certification to assess how the SWFWMD determined the water allocations from District ID/Owner ID well 1/PW-1 through 4/PW-4 would preclude LARGE impacts on the local environment. That information would require a detailed modeling of ALL water consumption projects in the area, which as I discussed above, was not done." (INT201R, p. 11) Contrary to Mr. Still's assertions, Progress Energy provided the detailed modeling required by the SWFWMD as part of the water permitting process for the LNP SCA. This modeling provided a baseline of what the existing cumulative impact or drawdown is from current groundwater withdrawals and allowed the SWFWMD to determine what the proposed added withdrawal will cause in additional drawdown and potential impacts to the water resources and environment. This modeling was completed for the proposed LNP withdrawals, and the minimal drawdown predicted for LNP's withdrawals

contributed to the FEIS's determination that the LNP groundwater withdrawals would have a SMALL impact.

Additionally, Mr. Still alleges that the EMP, Storm Water Prevention Plan and the Erosion and Sedimentation Plan should have been reviewed as part of the FEIS. Practically speaking, the FEIS was completed in April of 2012, before the drafts of these documents were completed. Also, these plans do not in any way support a finding of SMALL or LARGE impact. The projected modest drawdown based on the groundwater modeling, backed-up by the COC, demonstrates that the impacts on water resources from LNP groundwater withdrawals will be SMALL. These plans (along with the ATP) ensure that the system is monitored, analyzed and managed in a way that supports the best management practices in both the construction and operation of the LNP, and implement the COC to ensure the impacts on water resources and the environment will be SMALL.

**Q12: Is Mr. Still accurate in his assertions that the Florida water management districts are not equipped to carry out, and fail to cooperate in, regional groundwater resource planning? (INT201R, p. 17-19.)**

A12: No. In particular, the SWFWMD continues to be actively involved in regional groundwater resource planning. As part of the SWFWMD – District Water Management Plan, groundwater modeling and planning are key elements for future water supply planning efforts of the District. The LNP is located in the SWFWMD Northern Planning Region. Through cooperative efforts with the WRWSA, this region has been modeled and determinations of available water supplies for future development have been identified. This was accomplished through the WRWSA Regional Water Supply Plan Update - 2005; WRWSA Phase II – Detailed Water

Supply Feasibility Analyses - 2010; and the WRWSA Regional Framework Initiative – 2011, all completed by the WRWSA and co-funded by the SWFWMD.

The WRWSA Phase II – Detailed Water Supply Feasibility Analyses – 2010 analysis (PEF804) was used as the basis for updating the SWFWMD District Water Management Plan – 2010, and SWFWMD is co-funding the WRWSA’s effort to complete the update of the Regional Water Supply Plan to incorporate it in their Northern Region Planning Region Report scheduled for 2015.

The lack of coordination on regional groundwater modeling is also overstated by Mr. Still. Coordination between water management districts on a range of issues including groundwater resource planning has been and continues to be a priority of the Governor’s Office, FDEP, and the Florida water management districts. Formal and informal agreements and efforts to resolve inconsistencies at water management district boundaries are ongoing and issues are being resolved.

**Q13: Please respond to Mr. Still’s criticism regarding the absence of MFLs, minimum aquifer levels, and a Groundwater Basin Resource Availability Inventory for the area in the vicinity of the LNP site. (INT201R, pp. 17-19)**

A13: Mr. Still alludes to the fact that a Groundwater Basin Resource Availability Inventory was not mentioned in the FEIS for Levy County. When the Groundwater Basin Resource Availability Inventories were mandated by the Florida Legislature in the 1980s, counties split by two or more districts were analyzed and documents were produced by one district per agreement between districts. Because the majority of Levy County is geographically in the SRWMD, the SWFWMD and the SRWMD agreed that the latter would generate the Inventory. As Mr. Still says in his testimony, “The SRWMD has also not prepared a Groundwater Basin Resource

Availability Inventory.” Nevertheless, the best available information for water supply planning purposes relating to the LNP project is the SWFWMD District Water Management Plan – 2010.

Mr. Still is correct that Florida Statutes require Florida water management districts to set MFLs. While MFLs have not been set for the aquifers in Levy County to date, they have been set for a number of systems and more are planned in the coming years pursuant to a priority schedule approved by the FDEP. An MFL identifies that point at which a withdrawal would cause “significant harm” to the water resource or the environment. The “significant harm” standard is a considerably lesser standard of protection to the aquifers than the standard provided under the SWFWMD WUP process. The underlying principle of water use permitting is not to allow “harm” to occur to existing legal users, the water resource, or the environmental attributes of an area. This standard for WUPs is a much higher level of protection than is provided by the establishment of an MFL to avoid “significant harm.”

The WUP process and subsequent adaptive management strategy ensures the protection of water resources and the environment.

**Q14: Are you aware of any programmatic efforts by the SWFWMD that address Mr. Still’s examples regarding an alleged increased risk of saltwater intrusion into freshwater systems? (INT201R, pp. 7-9)**

A14: Yes. The SWFWMD has produced the “Coastal Groundwater Quality Monitoring Network/Water-Use Permit Network Report Volume VI – August 2011”. This report analyzes groundwater quality in areas potentially impacted by saltwater intrusion and/or upwelling of mineralized water. The SWFWMD has a combined total of over 350 wells that it monitors across 13 counties, and the intent of the report is to support

water resource management decisions by the SWFWMD by tracking water quality trend analyses and proving data for groundwater modeling.

Four of the wells analyzed in the August 2011 report are located in Levy County in the vicinity of LNP. These four wells are identified in the report as, CE 5; CE 70; ROMP 124 DEEP; and ROMP TR 125 CRACERT (PEF224; PEF218, pp. 23-24). Each of these wells is demonstrating a statistical no change or an improvement in water quality. Mr. Still's anecdotal report from the *Gainesville Sun* of water quality deterioration in Cedar Key does not appear applicable to this part of Levy County.

**Q15: Are you aware of the use of integrated surface-groundwater computer models by the SWFWMD or other Florida water management districts in connection with individual water use permit applications as implicitly recommended by Mr. Hazlett<sup>2</sup>? (INT001R, pp. 2-7)**

A15: Yes. An integrated surface-groundwater computer model was developed by TBW in collaboration with the SWFWMD for the Tampa Bay region. The Integrated Hydrologic Model allows predictive changes in levels and flows of groundwater and surface water by manipulating other inputs and outputs to the hydrologic system. These can include groundwater and surface water withdrawals; precipitation; evaporation and transpiration; and leakance or infiltration of water into the groundwater system. This modeling is an important tool for determination of potential adverse water resource or environmental impact, both individually and cumulatively, from the withdrawals from large public supply wellfields and rivers in

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<sup>2</sup> [Dr. Hazlett's testimony asserts that he is an expert in "integrated groundwater-surface water modeling." INT101R, p. 1. Although Dr. Hazlett does not explicitly recommend the substitution of an integrated model for the DWRM2, many of his criticisms of the DWRM2 relate to the purported advantages of integrated groundwater models.](#)

the conjunctive use water supply system utilized in the Tampa Bay Area. The Tampa Bay region is characterized as having consistent to “leaky” confinement between the Surficial and Upper Floridan Aquifers.

This extensive integrated modeling for the LNP site is not considered practical or needed by the SWFWMD. Because of the lack of confinement between the Surficial and Upper Floridan Aquifers in the portion of Levy County, in which the LNP site is located, predicted drawdown in the Upper Floridan Aquifer is a direct reflection of the impact to the Surficial Aquifer. This predicted drawdown can then be used to determine potential impacts to adjacent legal users of water and impacts to environmental features such as lakes, rivers, springs, and wetlands.

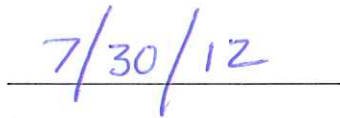
The groundwater modeling that was completed as part of the certification process is a tool that guides regulators and the applicant to determine the limits and extent of projected drawdown from the LNP wellfield. The DWRM 2 is a state-of-the art regulatory groundwater model that allows the SWFWMD to better understand the interrelationship between groundwater withdrawals and potential environmental and water resource impacts. Based on this modeling, Progress Energy has refined the design of its wellfield to minimize the potential for impacts. This is followed by a required EMP that defines a data collection program to ensure that if impacts occur they will be identified. Backing this up is an adaptive management strategy that is implemented if impacts appear that are caused by the LNP withdrawals. Adaptive management strategies can be employed to minimize and/or eliminate the impact. If adaptive management strategies do not mitigate the impact, then the project(s) included in the AWS Plan will be implemented to curtail the groundwater pumping.

SWFWMD's water use permitting and regulation is a robust program to ensure the water related needs of Progress Energy are met but at the same time protect the environmental and water resource attributes of the LNP site.

I, Peter G. Hubbell, swear under penalties of perjury that this document is my true and accurate testimony.



Signature



Date