# Levy Nuclear Plant Units 1 and 2

# COL Application

# Part 1

# General and Financial Information

# Revision 3

TABLE OF CONTENTS

LIST OF TABLES

# 1.0 GENERAL AND FINANCIAL INFORMATION

## 1.1 GENERAL INFORMATION

Pursuant to Sections 103 and 185(b) of the Atomic Energy Act, and 10 CFR Part 52, Subpart C, Florida Power Corporation doing business as Progress Energy Florida, Inc., a wholly-owned subsidiary of Progress Energy, Inc. (Progress Energy), hereby applies to the U.S. Nuclear Regulatory Commission (NRC) for a combined license (COL) to construct and operate Levy Nuclear Plant, Units 1 and 2 (LNP 1 and 2). LNP 1 and 2 is a two-unit Westinghouse AP1000 standard design for a pressurized water reactor. Progress Energy Florida, Inc., also applies for such other licenses as would be required to receive, possess and use source, special nuclear and byproduct material in connection with the operation of LNP 1 and 2.

Progress Energy, together with its subsidiaries, operates as an integrated energy company serving the southeast region of the United States. The company engages in the generation, transmission, distribution, and sale of electricity in North Carolina, South Carolina, and Florida. As of December 31, 2006, Progress Energy had approximately 21,300 megawatts of regulated electric generation capacity and served approximately 3.1 million retail electric customers. Progress Energy, formerly known as CP&L Energy, Inc., was founded in 1925 and is headquartered in Raleigh, North Carolina.

Progress Energy has a strong operational record and a growing customer base. Our focus on core business has achieved significant results. In 2006, the operational excellence achieved by Progress Energy resulted in the industry's highest honor: the Edison Award. In addition, the four nuclear plants operated by Progress Energy are consistently ranked among the industry's best in production, safety, and cost efficiency.

Our strategic challenge is to address the growth demands of the Carolinas and Florida while balancing the needs of customers, shareholders, and employees. To address this challenge, Progress Energy is implementing a balanced approach. The three main elements of this balanced solution are: increasing energy efficiency and supporting development of renewable energy sources for the future; modernizing existing plants to produce energy more cleanly and efficiently using state-of-the-art technology; and investing in new generating plants. The results of this approach will be a highly reliable energy supply, more stable electricity prices, a cleaner environment, and less dependence on imported energy.

The addition of nuclear base load generation in both North Carolina and Florida is required to meet this growth. In addition to this Combined License Application (COLA) for LNP 1 and 2, Progress Energy has submitted a COLA in 2008 to construct and operate two AP1000 nuclear units at the Shearon Harris Nuclear Power Plant site near Raleigh, North Carolina.

This application and supporting environmental report are intended to provide sufficient information for the NRC to complete its technical and environmental reviews and allow the NRC to make the finding required by 10 CFR 52.97 in support of the issuance of a COL for LNP 1 and 2. The following is the application filing and content information required by 10 CFR 50.33.

### 1.1.1 NAME OF APPLICANT

Progress Energy Florida, Inc.

1.1.2 ADDRESS OF APPLICANT

Progress Energy Florida, Inc.
100 Central Avenue
St. Petersburg, FL 33701-3324

1.1.3 DESCRIPTION OF BUSINESS OCCUPATION OF APPLICANT

Progress Energy is a holding company that includes regulated subsidiaries, Progress Energy Florida, Inc. (PEF) and Progress Energy Carolinas, Inc. (PEC). PEF is primarily engaged in the generation, transmission, distribution, and sale of electricity in portions of central and north Florida. PEF serves approximately 1.7 million customers in a territory encompassing over 20,000 square miles, including the cities of St. Petersburg, Clearwater, and areas surrounding Orlando.

PEF is primarily engaged in the generation, distribution, and sale of electricity in portions of Florida. PEF owns and operates the Crystal River plant.

- Crystal River - The single-unit, 838-MW Crystal River Nuclear Plant is located near Crystal River, FL, on a site that also includes four coal-fired generating units that generate 2,313 MW.

PEC owns and operates the following nuclear units:

- Shearon Harris – The single-unit, 900-MW Harris Nuclear Plant is located near New Hill, N.C. It is Progress Energy's newest nuclear plant, beginning commercial operation in 1987.

- Brunswick - The two-unit, 1,875-MW Brunswick Nuclear Plant is located near Southport, N.C. An additional 244 megawatts of electrical generation was added to the plant's output from 2002 to 2005 as part of an extended power uprate program that upgraded much of the plant's equipment.

- Robinson - The single-unit, 710-MW Robinson Nuclear Plant is located near Hartsville, S.C. This site also includes a coal-fired unit that generates 180 MW and a combustion turbine unit that generates 15 MW.

Progress Energy is located in Raleigh, NC and is subject to regulation by the Federal Energy Regulatory Commission (FERC) under the regulatory provisions of the Public Utility Holding Company Act of 2005 (PUHCA 2005). PEC and PEF are regulated public utilities. PEC is subject to the regulatory provisions of the North Carolina Utilities Commission (NCUC), the Public Service Commission of South Carolina (SCPSC), the NRC and the FERC. PEF is subject to the regulatory provisions of the Florida Public Service Commission (FPSC), the NRC and the FERC.

At the end of 2006, PEF had a summer peak generating capacity of 10,752 MW. PEF develops its resource plans based on maintaining capacity margins in the 11 percent to 17 percent range

to account for the forecasting uncertainty in the long-term or potential delays in bringing capacity online. The net energy for load is expected to increase by 2.6 percent per year from 2007 to 2016. The growth in the population is expected to reach an additional 7 million people by the year 2031.

### 1.1.4 ORGANIZATION AND MANAGEMENT OF APPLICANT

PEF is a corporation organized and existing under the laws of the State of Florida. PEF is a wholly-owned subsidiary of Progress Energy and is not owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government. PEF makes this application on its own behalf and is not acting as an agent or representative of any other person.

The names and addresses of Progress Energy directors and principal officers are listed below. All persons listed are U. S. citizens.

| Director | Address |
|---|---|
| John D. Baker II | Jacksonville, FL |
| James E. Bostic Jr. | Atlanta, GA |
| Harris. E DeLoach, Jr. | Hartsville, SC |
| James B. Hyler, Jr. | Raleigh, NC |
| William D. (Bill) Johnson | Raleigh, NC |
| Robert W. Jones | Bedford, NY |
| W. Steven Jones | Chapel Hill, NC |
| Melquiades R. “Mel” Martinez | Orlando, FL |
| E. Marie McKee | Corning, NY |
| John H. Mullin, III | Brookneal, VA |
| Charles W. Pryor, Jr. | Lynchburg, VA |
| Carlos A. Saladrigas | Miami, FL |
| Theresa M. Stone | Boston, MA |
| Alfred C. Tollison, Jr. | Marietta, GA |

| Principal Officers | Address |
|---|---|
| William D. (Bill) Johnson<br>Chairman, Chief Executive Officer, and President - Progress Energy, Inc. | Progress Energy, Inc.<br>410 S. Wilmington Street<br>Raleigh, NC 27601-1748 |
| Jeffrey (Jeff) J. Lyash<br>Executive Vice President – Energy Supply<br>Progress Energy, Inc. | Progress Energy, Inc.<br>410 S. Wilmington Street<br>Raleigh, NC 27601-1748 |
| Jeffrey (Jeff) A. Corbett<br>Senior Vice President - Energy Delivery<br>Progress Energy Carolinas | Progress Energy, Inc.<br>410 S. Wilmington Street<br>Raleigh, NC 27601-1748 |
| Lloyd M. Yates<br>President and Chief Executive Officer<br>Progress Energy Carolinas | Progress Energy, Inc.<br>410 S. Wilmington Street<br>Raleigh, NC 27601-1748 |
| James (Jim) Scarola<br>Senior Vice President and<br>Chief Nuclear Officer – Nuclear Generation<br>Progress Energy Carolinas and<br>Progress Energy Florida | Progress Energy, Inc.<br>410 S. Wilmington Street<br>Raleigh, NC 27601-1748 |
| Vincent M. Dolan<br>President and Chief Executive Officer<br>Progress Energy Florida | Progress Energy, Inc.<br>100 Central Avenue<br>St. Petersburg, FL 33701-3324 |
| John R. McArthur<br>Executive Vice President<br>Administration and Corporate Relations<br>Progress Energy Service Company<br>General Counsel and Corporate Secretary | Progress Energy, Inc.<br>410 S. Wilmington Street<br>Raleigh, NC 27601-1748 |
| Mark F. Mulhern<br>Senior Vice President and Chief Financial Officer<br>Progress Energy, Inc. | Progress Energy, Inc.<br>410 S. Wilmington Street<br>Raleigh, NC 27601-1748 |
| Paula J. Sims<br>Senior Vice President – Corporate Development and Improvement<br>Progress Energy Carolinas, Progress Energy Florida, and Progress Energy Service Company | Progress Energy, Inc.<br>410 S. Wilmington Street<br>Raleigh, NC 27601-1748 |
| Michael A. Lewis<br>Senior Vice President - Energy Delivery<br>Progress Energy Florida | Progress Energy, Inc.<br>100 Central Avenue<br>St. Petersburg, Fl 33701-3324 |

## 1.1.5 CLASS AND PERIOD OF LICENSE SOUGHT AND AUTHORIZED USES

PEF requests issuance of a Class 103 Facility Operating License for a period of no less than 40 years beyond the Commission's determination in 10 CFR 52.103(g) or allowing operation during an interim period under 52.103(c). LNP 1 and 2 will be used to produce electricity for sale.

In addition, this application is for the necessary licenses issued under 10 CFR 30, 10 CFR 40, and 10 CFR 70 to receive, possess, and use byproduct, source and special nuclear material. Special nuclear material shall be in the form of reactor fuel and spent fuel, in accordance with limitations for storage and amounts required for reactor operation, as described in Part 2 of this application. Byproduct, source, and special nuclear material shall be in the form of sealed neutron sources for reactor startup and sealed sources for reactor instrumentation, radiation monitoring equipment, calibration, and fission detectors in amounts as required. In preparation for the initial fuel loading, limitations on byproduct material and Part 40 specifically licensed source material will be as described in this application. Following the 52.103(g) finding, byproduct, source, and special nuclear material in amounts as required, without restriction to chemical or physical form, shall be for sample analysis, instrument and equipment calibration, or associated with radioactive apparatus or components.

## 1.1.6 ALTERATION SCHEDULE

PEF does not propose to alter any production or utilization facility in connection with this application.

## 1.1.7 REGULATORY AGENCIES AND LOCAL PUBLICATIONS

The Federal Energy Regulatory Commission and the FPSC are the principal regulators of PEF's electric operations in Florida.

Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

Area and local news publications and addresses are provided below.

Citrus County Chronicle
1624 N. Meadowcrest Blvd
Crystal River, FL 34429

Ocala Star Banner
2121 S. W. 19th Avenue Road
Ocala, FL 34474

Chiefland Citizen
PO Box 980

Chiefland, FL 32644

Nature Coast Newscaster
PO Box 64
Yankeetown, FL 34498

1.1.8 RADIOLOGICAL EMERGENCY RESPONSE PLANS

Progress Energy's approach for development of the Levy Nuclear Plant Units 1 and 2 Emergency Plan submitted as part of the COL application (COLA) involved development of an emergency plan based on current NRC and Federal Emergency Management Agency (FEMA) requirements and regulatory guidance into a document that addresses emergency preparedness for a new 2-unit site.

Emergency Preparedness Program elements described in the Levy Nuclear Plant Units 1 and 2 Emergency Plan are based, in part, on the elements currently in place at the Crystal River 3 (CR3) Nuclear Plant and described in the CR3 Radiological Emergency Response Plan, which meets all current NRC requirements and FEMA guidance.

Elements of the current CR3 Emergency Plan and the capability of the on-site and off-site emergency organizations to respond to, and recover from a classified emergency have been successfully demonstrated in actual events, periodic drills, and NRC/FEMA evaluated exercises in support of CR3. NRC Emergency Plan programmatic inspections and periodic independent 10 CFR 50.54 (t) audits indicate that the current CR3 Emergency Plan and Emergency Preparedness Program is maintained and updated appropriately in accordance with NRC requirements.

The Levy Nuclear Plant Units 1 and 2 Emergency Plan describes similar Emergency Preparedness Program elements and processes as the CR3 Radiological Emergency Response Plan; and both plans provide "reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency"."

The COLA emergency plan meets all current NRC requirements and regulatory guidance and was developed as a comprehensive "complete and integrated" emergency plan, in accordance with Regulatory Guide 1.206, Section C.I.13.3.1. The Levy Nuclear Plant Units 1 and 2 Emergency Plan, in conjunction with State and county plans, assures that adequate protective measures can be taken to protect on-site personnel and the public in the event of an emergency at the site.

# 2.0 FINANCIAL QUALIFICATIONS

## 2.1 CONSTRUCTION COSTS

***Proprietary Information – Withheld under 10 CFR 2.390 (a)(4)***
***(See COL Application Part 9.1)***

***Proprietary Information – Withheld under 10 CFR 2.390 (a)(4)***
***(See COL Application Part 9.1)***

## 2.2 OPERATING COSTS

Progress Energy is an electric utility as defined in 10 CFR 50.2. Progress Energy generates and distributes electricity and recovers the cost of this electricity through cost-of-service based rates established by the North Carolina Public Utility Commission, South Carolina Public Service Commission, FPSC, and FERC. Thus, as addressed in 10 CFR 50.33(f), estimates of operating costs for the first 5 years of operation are not required to be submitted.

## 3.0 DECOMMISSIONING FUNDING ASSURANCE

In accordance with 10 CFR 50.33(k) and 10 CFR 50.75(b), a decommissioning report is provided as Appendix A. This report certifies that decommissioning will be provided in an amount no less than the amount required by 10 CFR 50.75(c)(1) adjusted using a rate at least equal to that stated in 10 CFR 50.75(c)(2). This amount is currently $373,401,957 for each unit. Updated certifications and financial instruments will be submitted in accordance with 10 CFR 50.75(e)(3); and after the NRC publishes notice in the Federal Register under 10 CFR 52.103(a), the decommissioning funding amount will be adjusted using a rate at least equal to that stated in 10 CFR 50.75(c)(2). The decommissioning funding amount will be covered by PEF by the external sinking fund method. PEF will collect decommissioning funding contributions through regulated, cost-of-service based rates.

## 3.1 DECOMMISSIONING COSTS AND FUNDING - STATUS REPORTING

In accordance with 10 CFR 50.75(e)(3), PEF will, two years before and one year before the scheduled date for initial loading of fuel, submit a report containing a certification updating the information described in 10 CFR 50.75(b)(1). PEF will periodically report on the status of decommissioning funding on LNP 1 and 2.

## 3.2 RECORDKEEPING PLANS RELATED TO DECOMMISSIONING FUNDING

In accordance with 10 CFR 50.75(g), PEF will retain records, until the termination of the license, of information important to the safe and effective decommissioning.

# 4.0 RESTRICTED DATA AND CLASSIFIED NATIONAL SECURITY INFORMATION

The combined license application for LNP 1 and 2 does not contain any Restricted Data or other Classified National Security Information, nor does it result in any change in access to any Restricted Data or National Security Information. In addition, it is not expected that activities conducted in accordance with the proposed combined license will involve such information. However, in the event that such information does become involved, and in accordance with 10 CFR 50.37, “Agreement limiting access to Classified Information,” PEF will not permit any individual to have access to, or any facility to possess, Restricted Data or Classified National Security Information until the individual and/or facility has been approved for such access under the provisions of 10 CFR 25, “Access Authorization,” and/or 10 CFR 95, Facility Security Clearance and Safeguarding of National Security Information and Restricted Data.”

# APPENDIX A DECOMMISSIONING REPORT

Table A-1 provides the estimate of the total decommissioning costs, in 2007 dollars, for each LNP unit, using the formula given in 10 CFR 50.75. This is based on a thermal power rating for the AP1000 of 3400 Megawatts, thermal (MWt).

## Table A-1
## Decommissioning Costs per Unit for LNP 1 and 2

**Levy AP1000 NUCLEAR POWER UNIT (PWR)**
**CALCULATION OF CERTIFICATION AMOUNT**
**PER THE NUCLEAR REGULATORY COMMISSION**
**- DECEMBER 2007 UPDATE -**

**NRC REQUIRED MINIMUM DECOMMISSIONING AMOUNTS APPLICABLE (based on 10 CFR 50.75(c))***

MINIMUM AMOUNT (JAN. 1986 DOLLARS) REQUIRED TO DEMONSTRATE REASONABLE ASSURANCE OF FUNDS FOR DECOMMISSIONING:

Planned Reactor Power = 3400 MWt
NRC Minimum Amount = $105,000,000

**Cost Elements in 1986 dollars:**

FORMULA* = .65L + .13E +.22B

L = ESCALATION FACTOR FOR LABOR
E = ESCALATION FACTOR FOR ENERGY
B = ESCALATION FACTOR FOR WASTE BURIAL

| | | | |
|---|---|---|---|
| LABOR COSTS | .65 x $105,000,000 | = | $68,250,000 |
| ENERGY COSTS | .13 x $105,000,000 | = | 13,650,000 |
| WASTE BURIAL | .22 x $105,000,000 | = | 23,100,000 |
| | | | $105,000,000 |

**ESCALATION OF COST FACTORS TO DECEMBER 2007:**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| LABOR | | | $68,250,000 | x | 106.7 x 1.98 /100 | (1) | = | $144,189,045 |
| ENERGY (2) | .58P x $13,650,000 | = | 7,917,000 | x | 180.5/114.2 | (2) | = | 12,513,297 |
| | .42F x $13,650,000 | = | 5,733,000 | x | 230.6/82.0 | (2) | = | 16,122,315 |
| WASTE BURIAL | | | $23,100,000 | x | 8.683/1.000 | (3) | = | 200,577,300 |

**MINIMUM AMOUNT OF DECOMMISSIONING COSTS (IN DECEMBER 2007 DOLLARS)** $373,401,957

| PARTICIPANTS | PERCENTAGE SHARE | MINIMUM AMOUNT OF DECOMMISSIONING COSTS PER NRC FORMULA (DECEMBER 2007 DOLLARS) |
|---|---|---|
| Power Agency | 0.0000% | $0 |
| SUBTOTAL - PARTICIPANTS | 0.0000% | $0 |
| PROGRESS ENERGY FLORIDA | 100.0000% | $373,401,957 |
| TOTAL | 100.0000% | $373,401,957 |

Notes:
Labor and Energy indices are from the U.S. Department of Labor, Bureau of Labor Statistics, http://stats.bls.gov
(1) The labor adjustment factor has two components:
(a) The December 2005 base labor adjustment factor of 1.98 for the South Region (based on January 1986 index base value of 100), sourced from NUREG-1307 Rev. 12 Table 3.2;
(b) The December 2007 Employment Cost Index (ECI) of 106.7 (based on the December 2005 index base value of 100), sourced from Bureau of Labor Statistics Internet Data Page.
(2) Energy costs are composed of 58% electrical power and 42% fuel oil (per NUREG-1307).
The escalation factor for electrical power is the December 2007 value of 180.5 divided by the January 1986 base value of 114.2.
The escalation factor for light fuel oil is the December 2007 value of 230.6 divided by the January 1986 base value of 82.0.
(3) The escalation factor for waste burial is sourced from NUREG-1307 Rev. 12, Table 2.1.