Florida Power & Light Company, 6501 S. Ocean Drive, Jensen Beach, FL 34957

December 5, 2006

L-2006-263
10 CFR 50.59

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

Re: St. Lucie Unit 2
Docket No. 50-389
Report of 10 CFR 50.59 Plant Changes

Pursuant to 10 CFR 50.59(d)(2), the attached report contains a brief description of any changes, tests, and experiments, including a summary of the 50.59 evaluation of each which were made on Unit 2 during the period of February 15, 2005 through June 12, 2006. This submittal correlates with the information included in Amendment 17 of the Updated Final Safety Analysis Report submitted under separate cover.

Please contact us should there by any questions regarding this information.

Very truly yours,

Gordon L. Johnston
Site Vice President
St. Lucie Plant

GLJ/tlt

Attachment

JE47

ST. LUCIE UNIT 2
DOCKET NUMBER 50-389
CHANGES, TESTS AND EXPERIMENTS
MADE AS ALLOWED BY 10 CFR 50.59
FOR THE PERIOD OF
FEBRUARY 15, 2005 THROUGH JUNE 12, 2006

INTRODUCTION

This report is submitted in accordance with 10 CFR 50.59 (d)(2), which requires that:

i) changes in the facility as described in the SAR;
ii) changes in procedures as described in the SAR; and
iii) tests and experiments not described in the SAR

that are conducted without prior Commission approval be reported to the Commission in accordance with 10 CFR 50.90 and 50.4. This report is intended to meet these requirements for the period of February 15, 2005 through June 12, 2006.

This report is divided into three (3) sections. First, changes to the facility as described in the Updated Final Safety Analysis Report (UFSAR) performed by a Plant Change/Modification (PC/M). Second, changes to the facility/procedures as described in the UFSAR, or tests/experiments not described in the UFSAR, which are not performed by a PC/M. Third, a summary of any fuel reload 50.59 evaluation.

Each of the documents summarized in Sections 1, 2 and 3 includes a 10 CFR 50.59 evaluation that evaluated the specific change(s). Each of these 50.59 evaluations concluded that the change does not require a change to the plant technical specifications, and that prior NRC approval is not required.

TABLE OF CONTENTS

SECTION 1

PLANT CHANGE / MODIFICATIONS

PLANT CHANGE/MODIFICATION 05034

REVISION 0

FEEDWATER CONTROL REPLACEMENT – PHASE 2

Summary:

This modification upgrades the existing Feedwater Regulating System (FWRS), Steam Bypass Control System (SBCS), and the Reactor Coolant Pump (RCP) monitoring and display system with new Distributed Control System (DCS) equipment and software. The new DCS equipment will interface with the installed DCS and Plant Data Network. A new version of software, version 8.0, has been developed and migrated over to the existing DCS to improve system performance.

This modification upgrades the ABB controllers FIC-9011/9021 located on Reactor Turbine Generator Board (RTGB) 202 with DCS compatible touch screen manual/auto (M/A) stations. Ten RTGB 202 indicators and six RTGB 202 recorders associated with the Feedwater and sixty RCP indicators on RTGB 203 are being replaced with Flat Panel Displays (FPDs).

A new cabinet (ALC-6) was installed in the cable spreading room. The cabinet houses a new control processor, field-bus modules, baseplates and power supplies to interface with the annunciator logic cabinets.

The reason for this modification was to reduce the instability (oscillations) of the FWRS and to upgrade this control system along with the SBCS Steam Dump to Condenser Valve controls and the RCP monitoring and display system to a DCS. The existing Low Power Feedwater 15% Bypass Control Valves and SBCS Steam Dump to Condenser Valve pneumatic positioners were replaced with digital positioners to enhance tuning and diagnostic capability.

SECTION 2

50.59 EVALUATIONS

EVALUATION SENS-00-013
REVISION 4

USE OF PRC-01 RESIN TO REMOVE CO-58 CONTAMINANTS

Summary:

Revisions 0, 1 and 2 were identified in the 50.59 summary report issued in 2002. Revision 3 was identified in the 50.59 summary report issued in 2005. Revision 4 was approved in 2006 and is thus included in this report.

This evaluation was prepared to examine the use of PRC-01 resin material in the chemical and volume control system (CVCS) letdown demineralizers without mode restrictions and extends authorized use to the Fuel Pool Ion Exchanger.

Revision 1 made minor modifications to the plant restrictions provided previously, to add and more precisely paraphrase UFSAR text and to include an additional required action related to calibration of the CVCS ion exchanger bypass valve.

Revision 2 provided a basis for extending use of PRC-01 resin to any condition where the effective neutron multiplication factor is less than 1.0, consistent with the plant restrictions identified herein. Revision 2 also incorporated format and content changes necessary to comply with the changes to 10 CFR 50.59.

Revision 3 removed a requirement that the PRC-01 resin must be taken out of service when hydrogen peroxide concentration in the RCS is greater than 5 ppm. This requirement was originally provided to conservatively reduce exposure of the resin to oxidizing environments. Laboratory testing and subsequent plant experience indicates this restriction is not required when plant chemistry is maintained in accordance with EPRI guidelines. Revision 3 also provided some minor administrative documentation changes.

Revision 4 extends use of PRC-01 resin in the demineralizers in the CVCS letdown subsystem when the reactor is critical and extends authorized use of PRC-01 to the Fuel Pool Ion Exchanger. The online restriction in CVCS use was initially provided as one of a number of restrictions governing the first use of PRC-01 resin at St. Lucie. Subsequent plant experience indicates this restriction is not required to maintain plant chemistry in accordance with EPRI guidelines. Extension of PRC-01 use to the Fuel Pool Ion Exchanger will provide additional water clarity and is consistent with use at Turkey Point and other plants. In addition, a number of other more minor changes are made to align St. Lucie's more restrictive first-use procedure with current vendor guidance.

EVALUATION SECJ-04-064

REVISIONS 0 & 1

CASK CRANE MAIN HOIST WEIGHT LIMIT INCREASE TO 150 TONS

Summary:

The cask handling cranes at St. Lucie Units 1 and 2 have been replaced with new single-failure-proof cask cranes of greater capacity. The new cranes have a 150 ton single-failure-proof main hoist and a conventional 25 ton auxiliary hoist.

The purposes of this evaluation are to increase the main hoist load limit to the maximum critical load capacity of the new main hoist (150 tons); expand the main hoist safe load path to include all the area that is accessible to the main hoist; and permit the main hoist to place the cask lid on the cask when the cask contains spent fuel.

The main hoist load increase and expanded safe load path are not limited to spent fuel casks. Load transport safety does not depend on the load shape or composition. Therefore, the main hoist may be used to transport other loads of up to 150 tons within the area accessible to the main hoist.

For the purpose of this evaluation, placing the lid on the cask includes lowering the lid onto the cask and/or lifting the lid off the cask. (This recognizes the possibility that it may be desired to raise the lid after it has been set on the cask.)

The main hoist load limit was increased by revising Unit 2 UFSAR Sections 9.1.4.1.2.2 and 13.7.1.8 through 13.7.1.8.2. The main hoist load path was expanded by revising the heavy loads procedure, AP-0010438. The main hoist permissive to place the cask lid on the cask when the cask contains spent fuel is provided by revising Unit 2 UFSAR Section 13.7.1.7.1 and the heavy loads procedure, AP-0010438.

Revision 1 incorporates updated references.

EVALUATION SENS-06-038

REVISIONS 0 & 1

FUEL HANDLING BUILDING PLACEMENT OF TRI-NUCLEAR FILTER/VACUUM ABOVE SPENT FUEL RACKS FOR SPENT FUEL POOL CLEAN-UP

Summary:

Water in the spent fuel pool (SFP) was exhibiting a high level of turbidity, a condition that will hinder the movement of fuel assemblies in the pool. To alleviate this condition a Tri-Nuclear filter/vacuum system was placed in the SFP to filter the pool water. The filter/vacuum equipment was attached to existing handrail support posts and suspended in the pool above the storage racks.

Revision 1 was issued to add discussion regarding the potential for the filter/vacuum to drop and land flush on one or more spent fuel assemblies.

SECTION 3

RELOAD EVALUATION

PLANT CHANGE/MODIFICATION 05197

REVISIONS 0

ST. LUCIE UNIT 2 CYCLE 16 RELOAD

Summary:

This engineering package provides the reload core design for St. Lucie Unit 2 Cycle 16 developed by Florida Power & Light Company (FPL) and Westinghouse Electric — Combustion Engineering (W-CE). The Cycle 16 core was designed for a nominal cycle length of 11,240 EFPH, based on a nominal Cycle 15 length of 10,200 EFPH. The Cycle 16 reload design supports an additional end-of-cycle coastdown length of 360 EFPH with a maximum reduction in primary coolant inlet temperature to 535 degrees F.

The primary design change to the core for Cycle 16 was the replacement of 77 irradiated fuel assemblies with 72 fresh Region T assemblies and 4 irradiated Region P fuel assemblies and 1 Region S assembly currently residing in the spent fuel pool. The fuel in the Cycle 16 core was arranged in a low leakage pattern. The mechanical design of the Region U fuel is essentially the same as that of the Region T fuel, and consists of "value-added" fuel pellets and the "guardian grid" design, first introduced in Cycle 11. The only significant difference is that Region U incorporates an Inconel top grid to mitigate grid-to-rod fretting failures observed at this unit in recent cycles.

The implementation instructions provided in this modification support a full core off-load. The safety analysis of this design was performed by W-CE and by FPL using NRC approved methodologies.

The Cycle 16 reload analysis supports a maximum steam generator tube plugging level of 2520 tubes per steam generator (30% average) with a maximum asymmetry of 600 tubes between the two steam generators, and a minimum reactor coolant system (RCS) flow of 335,000 gpm. Additionally, the Cycle 16 reload analysis supports the replacement of the circuit cards for the RCS Low Flow Trip transmitters to add a variable dampening feature, which will increase the total response time from 0.65 second up to 0.90 second.