



June 16, 2006

L-2006-139
10 CFR 50.59(d)

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

Re: St. Lucie Unit 1
Docket No. 50-335
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 1 during the period of April 26, 2004 through December 19, 2005. This submittal correlates with the information included in Amendment 21 of the Updated Final Safety Analysis Report submitted under separate cover.

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

Very truly yours,

Christopher R. Cestango for SVP

Gordon L. Johnston
Acting Vice President
St. Lucie Plant

GLJ/spt

Attachment

JE47

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ST. LUCIE UNIT 1
DOCKET NUMBER 50-335
CHANGES, TESTS AND EXPERIMENTS
MADE AS ALLOWED BY 10 CFR 50.59
FOR THE PERIOD OF
APRIL 26, 2004 THROUGH DECEMBER 19, 2005

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 April 26, 2004 through December 19, 2005.

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. And 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 prior NRC approval is not required.

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SECTION 1

PLANT CHANGE / MODIFICATIONS

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PLANT CHANGE/MODIFICATION 02170

REVISION 0

ABANDONMENT OF THE UNIT 1 BORONOMETER

Summary:

This modification provides for the abandonment in place of the RCS letdown boronometer, which has been out of service since 9/3/01. This change also provides for replacing the boron dilution event detection and mitigation function of the boronometer with the existing boron dilution alarm, which is an integral component of the excore neutron flux monitoring system. Included in this abandonment are the removal of the signal processor, the signals to Annunciator Panel M and to ERDADS, the high/low range status lights, and the boron concentration recorder.

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PLANT CHANGE/MODIFICATION 03068

REVISION 1

UNIT 1 DDPS, SOER, AND PDN MODIFICATION

Summary:

This modification replaced the obsolete digital data processing system (DDPS) and the sequence of events recorder (SOER) with a distributed control system (DCS). The DCS performs the same functions as the DDPS and SOER systems, reactor in-core power monitoring, control element assembly position indication, CEA control interlocks, and reactor power determination based on calorimetric inputs. The DCS adds additional display, data access and data archiving capabilities. The modification also installed a common plant data network (PDN).

The new system has a common graphical user that provides a greater detail of information to control room operators. It records data, previously printed on an hourly or daily basis, directly to permanent digital storage. Historical data is available on control room displays in tabular or trend forms. Printed reports can still be obtained on demand or on a scheduled print frequency. The DCS has the capability of providing near real time data to corporate users over the plant LAN (firewall protected).

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PLANT CHANGE/MODIFICATION 03098

REVISION 0

RECONFIGURATION OF FUEL POOL STORAGE

Summary:

This modification provided the requirements for repositioning certain irradiated fuel assemblies currently stored in the spent fuel pool storage racks. It also identified activities whose completion was required to ensure conformance with the associated NRC SER. This modification also provided direction for positioning of future fuel assembly additions to the fuel pool.

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PLANT CHANGE/MODIFICATION 04059

REVISIONS 0, 1 & 2

FEEDWATER CONTROL REPLACEMENT - PHASE 2

Summary:

This modification replaced the existing feedwater flow and steam generator level controls, the reactor coolant pump monitor and display system, and the atmospheric dump valve controls with new distributed control system (DCS) equipment and software. In addition to the controller replacement, the positioner components of the main feedwater regulating valves, the low power feedwater 15% bypass control valves, and the atmospheric dump valves were replaced with digital positioners. The Manual/Auto stations for these valves were also replaced. Ten reactor turbine generator board (RTGB) 102 indicators and four RTGB 102 recorders associated with the feedwater and ADV system and 52 RCP indicators in RTGB 103 were replaced with flat panel displays (FPD). Inputs from the RCP vibration monitoring system on the back of RTGB 104 were brought into the DCS and are displayed on the FPD on the front of RTGB 103. A display driver cabinet was installed to drive the FPDs. Additionally, the four SG level bypass key lock selector switches located on the front of RTGB 102 were relocated to the back of RTGB 102 to make room for the FPDs.

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PLANT CHANGE/MODIFICATION 04149

REVISIONS 0, 1 & 2

REPLACEMENT PRESSURIZER COMPONENT -
PRESSURIZER REPLACEMENT PROJECT

Summary:

This modification provided instructions for the update of the documentation for pressurizer replacement modification and summarized the analyses and evaluations performed by the vendor, AREVA, to demonstrate equivalency of the replacement pressurizer. This modification covered the component only, since installation was covered by other modifications listed therein. The modification/package consisted of a system procedure reviews, vendor drawing input (replacement pressurizer), drawing review and revision/deletion (original pressurizer), design report review, and calculation and evaluation reviews. The pressurizer includes immersion heaters and sleeves, the internal spray nozzle, spray line and surge line piping nozzles, safety and relief valve nozzles, and pressure/level/temperature instrumentation taps.

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SECTION 2

50.59 EVALUATIONS

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EVALUATION SENJ-05-027

REVISION 0

TRANSMITTAL OF 10 CFR 50.59 EVALUATION OF ST. LUCIE UNIT 1
REPLACEMENT PRESSURIZER

Summary:

This Evaluation provided for the transmittal of the "Replacement Pressurizer (RPZR) Report for Florida Power and Light St. Lucie Unit 1" (Framatome ANP Inc. Report No. 77-5044551-02, Revision 2, April 2005) to the site and to FPL Document Control, pursuant to guidance in the Engineering Quality Instructions. The 10 CFR 50.59 evaluation is part of the Framatome report, which is in Volume 1 of the four-volume "Stand Alone Safety Evaluation" (SASE) project documentation. The SASE was developed to provide an overview of the various facets of the RPZR project.

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EVALUATION SEMS-05-030

REVISION 0

LOAD COMBINATIONS FOR ASME CODE CLASS 3
COMPONENT - ICW/CCW STRAINER UFSAR UPDATE

Summary:

This evaluation documented the acceptability of using load combinations and corresponding NRC approved ASME Code service level allowables in lieu of those currently listed in UFSAR Table 3.9-3A to qualify the Unit 1 Intake Cooling Water /Component Cooling Water strainers. These load combinations were developed using St. Lucie Unit 2 criteria and are consistent with Regulatory Guide (RG) 1.48 for safety related Code Class 3 components. The evaluation concluded that the use of RG 1.48 load combinations corresponding to NRC approved later edition ASME Code service level allowables to qualify the Unit 1 ICW/CCW strainers is acceptable.

EVALUATION SEIS-05-039

REVISIONS 0 & 1

ALTERNATE NIS EXCORE DETECTOR ARRANGEMENT

Summary:

This Evaluation provided for an alternative nuclear instrument system (NIS) excore detector arrangement which substitutes power range control channel (CC1) for linear power range channel C (LRC) in the reactor protection system. The alternative arrangement restores RPS channel C to operable status and reactor trip logic from one-out-of-three (1/3) to two-out-of-four (2/4) coincidence. The alternative arrangement was necessary since the LRC was inoperable due to grounding of its cable and/or detector. Technical Specifications require an inoperable linear power range channel after 48 hours to either be restored to operable status or be placed in trip status. With a linear power range channel in trip status, the RPS is using 1/3 coincidence for trip logic, and therefore, spurious signals or failures of equipment in the RPS will result in reactor trip. Using the alternative arrangement, the LRC detector no longer provides the RPS input. The CC1 detector provides the input signal instead.

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EVALUATION SECS-05-066

REVISIONS 0 & 1

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

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.

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EVALUATION SEMS-99-043

REVISION 1

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

Summary:

This evaluation was prepared to examine the use of an additional resin material in the chemical and volume control system (CVCS) ion exchangers during plant cooldown, reactor refueling and plant heatup evolutions. The additional resin material to be used during conditions specified in this evaluation is porous media with an enhanced capability for removing Cobalt 58 (Co-58). This product material is identified as PRC-01. PRC-01 will increase the decontamination factor (DF) of the CVCS cleanup system for both soluble cations and sub-micron sized insoluble corrosion products as measured by the Co-58 isotope.

This evaluation concluded that PRC-01 resin may be effectively and acceptably applied to cleanup of the RCS during, cooldown, refueling and plant heatup.

Revision 1 removed the requirement that PRC-01 resin must be taken out of service when hydrogen peroxide concentration in the RCS is greater than 5 ppm. It also extended the use of PRC-01 resin in the demineralizers in the CVCS letdown subsystem when the reactor is critical and extended authorized use of PRC-01 to the fuel pool ion exchanger.

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SECTION 3

RELOAD EVALUATION

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PLANT CHANGE/MODIFICATION 05060

REVISIONS 0 & 1

ST. LUCIE UNIT 1 CYCLE 20 RELOAD

Summary:

This modification provided the Cycle 20 reload core design by Framatome and FP&L. The core was designed for a cycle length of 11,740 EFPH.

The modification package provided the design of the Cycle 20 core, including the replacement of 69 irradiated fuel assemblies with 68 fresh Region BB and 1 irradiated Region S fuel assembly previously residing in the spent fuel pool.

The safety analysis for Cycle 20 reload design was performed by Framatome-ANP and FPL using NRC-approved methodology. The analyses support a departure from nucleate boiling ratio (DNBR) limit at the 95/95 probability/confidence level, consistent with the applicable DNB correlations previously approved by the NRC.

The linear heat rate corresponding to the fuel centerline melt limit for Cycle 20 is 24.18 kW/ft. All analyses in support of the modification package were performed with the assumption of average steam generator tube plugging level not to exceed 15% average with a maximum asymmetry of +/- 7% about the average.

Revision 1 was issued to address Cycle 20 operation with excore detector #7 rotated from its normal operating position. The revision provided for: 1) incorporation of the possible range of excore detector #7 positions into the Cycle 20 safety analysis, 2) new excore detector calibration factors, 3) subchannel deviation alarm penalty factors, and 4) revision of the UFSAR change package. Revision 1 also included minor Cycle 20 BEACON model changes.