NEXTera ENERGY POINT BEACH

September 11, 2009

NRC 2009-0094
10 CFR 50.90

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Point Beach Nuclear Plant, Units 1 and 2
Dockets 50-266 and 50-301
Renewed License Nos. DPR-24 and DPR-27

License Amendment Request 261
Extended Power Uprate
Expedited Review Request

References:
(1) FPL Energy Point Beach, LLC letter to NRC, dated April 7, 2009, License Amendment Request 261, Extended Power Uprate (ML091250564)
(2) NRC letter to NextEra Energy Point Beach, LLC, dated June 29, 2009, Deferral of the Extended Power Uprate Acceptance Review and Acceptance review of the Auxiliary Feedwater Modifications and Non Conservative Setpoint Technical Specifications (ML091760338)
(3) Public meeting on August 6, 2009 between NRC and NextEra Energy Point Beach, LLC, Point Beach Extended Power Uprate and Alternate Source Term Review Planning Meeting Presentation (ML092190563)
(4) NRC letter to NextEra Energy Point Beach, LLC, dated August 25, 2009, Point Beach Nuclear Plant, Units 1 and 2 – Extended Power Uprate (EPU) Acceptance Review (ML 092250008)

NextEra Energy Point Beach, LLC (NextEra) submitted License Amendment Request (LAR) 261 (Reference 1) on April 7, 2009, pursuant to 10 CFR 50.90. The proposed amendment would increase each unit's licensed power level from 1540 megawatts thermal (MWt) to 1800 MWt reactor core power, and revise the Technical Specifications (TS) to support operation at the increased core thermal power level.

After initial review of the LAR 261, the NRC accepted the auxiliary feedwater (AFW) and non-EPU reactor protection system/emergency safety features actuation system (RPS/ESFAS) setpoint portions for review (Reference 2). During subsequent verbal discussions between NextEra and the NRC, the staff also agreed to review the associated TS to support implementation during the spring 2010 refueling outage on PBNP Unit 1. Acceptance of the balance of the EPU LAR, however, was delayed pending issuance of requests for additional information (RAIs) on LAR 241, Alternative Source Term. Based upon the schedular considerations contained in LIC-112, Power Uprate Process, for review of EPUs, NRC review of

the balance of the EPU LAR would move beyond the original spring 2010 refueling outage EPU implementation of Unit 1.

During a public meeting between NextEra and NRC conducted on August 6, 2009 (Reference 3), NextEra indicated that in addition to the TS for implementation of AFW and non-EPU related RPS/ESFAS setpoints, NextEra would need several additional proposed TS changes approved early in order to implement the EPU modifications planned during the spring refueling outage on PBNP Unit 1. This would allow NextEra to implement the EPU at mid-fuel cycle on Unit 1 once the NRC review of the balance of the EPU was complete.

On August 25, 2009, the NRC stated that they will start the acceptance review of the EPU (Reference 4). In order to review and approve the TS required to support implementation of the EPU modifications during the spring 2010 refueling outage on PBNP Unit 1, however, the pertinent sections of the EPU LAR must be identified and documentation provided to assure that the analyses reviewed remain bounding for the current licensed power level. Enclosure 1 provides this information.

This letter contains no new regulatory commitments and no revisions to existing commitments.

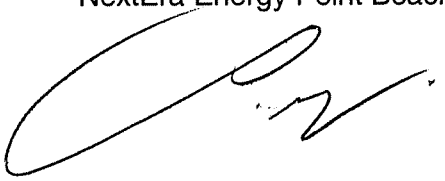
The information contained in this letter does not alter the no significant hazards consideration contained in Reference (1) and continues to satisfy the criteria of 10 CFR 51.22 for categorical exclusion from the requirements of an environmental assessment.

In accordance with 10 CFR 50.91, a copy of this letter is being provided to the designated Wisconsin Official.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on September 11, 2009.

Very truly yours,

NextEra Energy Point Beach, LLC



Larry Meyer
Site Vice President

Enclosures

cc: Administrator, Region III, USNRC
Project Manager, Point Beach Nuclear Plant, USNRC
Resident Inspector, Point Beach Nuclear Plant, USNRC
PSCW

ENCLOSURE 1

NEXTERA ENERGY POINT BEACH, LLC
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

LICENSE AMENDMENT REQUEST 261
EXTENDED POWER UPRATE
EXPEDITED REVIEW REQUEST

TABLE OF CONTENTS

1. INTRODUCTION

In April 2009, NextEra Energy Point Beach, LLC (NextEra) submitted License Amendment Request (LAR) 261 for an Extended Power Uprate (EPU) for the Point Beach Nuclear Plant (PBNP) Units 1 and 2 (Reference 1). The EPU LAR included proposed Technical Specifications (TS) and analysis methodology changes supporting operation of PBNP at the uprated power level. The EPU analyses and methods form the licensing basis for operation at EPU conditions.

After initial review of the LAR, the NRC accepted the auxiliary feedwater (AFW) and non-EPU reactor protection system/emergency safety features actuation system (RPS/ESFAS) setpoint portions for review, and agreed to review the associated TS to support EPU modification installation during the spring 2010 Unit 1 refueling outage. Acceptance of the balance of the LAR was delayed pending issuance of requests for additional information (RAIs) on LAR 241 Alternative Source Term. Based upon the schedular considerations in NRC Office Instruction LIC-112 (Reference 4) for review of EPU submittals, NRC approval of the balance of the LAR would extend beyond the spring 2010 Unit 1 refueling outage. EPU implementation on PBNP Unit 2 is scheduled for the spring 2011 refueling outage.

During a public meeting between NextEra and NRC on August 6, 2009 (Reference 5), NextEra indicated that in addition to the TS for implementation of AFW and non-EPU RPS/ESFAS setpoints, NextEra would need several additional TS approved early to implement the EPU modifications planned during the Unit 1 spring 2010 refueling outage. This would allow NextEra to implement the EPU mid-fuel cycle on Unit 1, once review of the balance of the LAR was complete

On August 25, 2009, the NRC indicated that the acceptance review of the balance of the LAR had commenced. It was also indicated that in order to review and approve the TS required to support implementation of the EPU modifications during the Unit 1 spring 2010 refueling outage, NextEra must identify the sections of the LAR NextEra needed to be reviewed, along with the analyses contained in these sections that are bounding for the current licensed power level.

2. PURPOSE

This letter identifies the sections of LAR 261that review on an expedited basis is needed as defined in Sections 4 through 6 below. These sections include the TS, methodologies and safety analyses to support installation of the EPU modifications for PBNP Unit 1 during the upcoming spring 2010 refueling outage. These EPU analyses are bounding for the current licensed power level and permit operation of Unit 1 at the current licensed power level after installation of the EPU modifications. Limited modifications (auxiliary feedwater upgrade and loss of voltage relay time delay setting changes) will be made to Unit 2. TS must be approved to support installation of these modifications. Each TS, methodology, safety analyses, and Licensing Report (LR) section is identified.

3. SCOPE

The modifications requiring approval of TS for Units 1 and 2 are:

Unit 1 Modifications:

- Auxiliary feedwater system (AFW)
- New main feedwater isolation valves (MFIV)
- Steam generator internals modifications
- Selected revised settings for main steam safety valves (MSSV)
- Revised tolerances for pressurizer safety valves (PSV)
- Revised condensate storage tank (CST) requirements (including revised AFW pump suction transfer ESFAS setpoint)
- Loss of voltage relay time delay settings
- Changes to pressurizer level

Unit 2 Modifications:

- Auxiliary feedwater system (AFW)
- Revised condensate storage tank (CST) requirements (including revised AFW pump suction transfer ESFAS setpoint)
- Loss of voltage relay time delay settings

In addition, a subset of RPS/ESFAS TS require approval. Certain methodologies and codes (GOTHIC, RETRAN, VIPRE, LOFTTR2 and a reconstituted high energy line break (HELB) program) listed in Section 5 also need approval to support the TS changes.

Implementation of the new AFW system and loss of voltage relay time delay settings will also be completed on Unit 2 during the Unit 1 refueling outage. This letter affirms that operation of Unit 2 at the current licensed power level is acceptable with the new AFW system and loss of voltage relays installed following the spring 2010 outage.

Only TS methods and supporting LR sections required to support installation of the modifications (and subsequent operation at the current licensed power level) are provided.

4. TECHNICAL SPECIFICATIONS

NextEra requests review and approval of the TS listed below by February 1, 2010, to support installation of the EPU modifications during the upcoming Unit 1 refueling outage that is scheduled to begin on March 1, 2010. These TS support operation of the units at the current licensed power level following installation of the EPU modifications during the Unit 1 refueling outage. The required TS(s) provide the pertinent EPU LR sections to support the TS change(s).

4.1 TS 3.3.1, Reactor Protection System (RPS) Instrumentation, Function 13, Steam Generator Water Level Low Low (Item 6k, Attachment 1 of EPU LAR)

- LR Section 2.8.5.2.3 – Loss of Normal Feedwater Flow

4.2 TS 3.3.1, Reactor Protection System (RPS) Instrumentation, Function 7a, Pressurizer Pressure Low (Item 6h, Attachment 1 of EPU LAR)

- LR Section 2.4.1 – Reactor Protection Engineered Safety Features and Control Systems
- LR Section 2.4.2.1 – Plant Operability (Margin to Trip)
- LR Section 2.4.2.2 – Pressure Control Component Sizing
- LR Section 2.8.5.6.2 – Steam Generator Tube Rupture
- Appendix E – Supplement to LR Section 2.4.1

The following TS are recalculated non-EPU setpoints:

4.3 TS 3.3.1, Reactor Protection System (RPS) Instrumentation

- Function 7.b, Pressurizer Pressure High (Item 6i, Attachment 1 of EPU LAR)
- Function 8, Pressurizer Water Level High (Item 6j, Attachment 1 of EPU LAR)
- Function 14, SG Water Level Low (Item 6l, Attachment 1 of EPU LAR)
- Function 17b(2), Low Power Reactor Trip Block P-7, Turbine Impulse Pressure (Item 6m, Attachment 1 of EPU LAR)
- Function 5.b, Feedwater Isolation – SG Water Level High (Item 7i, Attachment 1 of EPU LAR)
- Function 8, SI Block – Pressurizer Pressure (Item 7m, Attachment 1 of EPU LAR)

The following sections support the six functions listed above.

- LR Section 2.4.1 - Reactor Protection, Engineered Safety Features and Control Systems
- Appendix E – Supplement to LR Section 2.4.1

4.4 TS 3.3.2, Engineered Safety Feature Actuation System (ESFAS) Instrumentation, Function 1e, Safety Injection – Steam Line Pressure Low (Item 7e, Attachment 1 of EPU LAR)

- LR Section 2.4.1 – Reactor Protection Engineered Safety Features and Control Systems
- LR Section 2.4.2.1 – Plant Operability (Margin to Trip)
- LR Section 2.4.2.2 – Pressurizer Control Component Sizing
- LR Section 2.8.5.1.2 - Steam System Piping Failures Inside and Outside Containment
- Appendix E – Supplement to LR Section 2.4.1

4.5 TS 3.3.2, Engineered Safety Feature Actuation System (ESFAS) Instrumentation, Function 4d, Steam Line Isolation – High Steam Flow Coincident with Safety Injection and Tavg Low (Item 7h, Attachment 1 of EPU LAR) (Note – Only changing low Tavg)

- LR Section 2.5.1.3 – Pipe Failures

4.6 TS 3.3.2, Engineered Safety Feature Actuation System (ESFAS) Instrumentation, Function 6b, Auxiliary Feedwater on SG Water Level Low Low (Item 7j, Attachment 1 of EPU LAR)

- LR Section 2.4.1 – Reactor Protection Engineered Safety Features and Control Systems
- LR Section 2.2.2.5 - Steam Generators and Supports
- LR Section 2.8.5.0 – Non-LOCA Introduction
- LR Section 2.8.5.2.2 - Loss of Non-Emergency AC Power to Station Auxiliaries
- LR Section 2.8.5.2.3 - Loss of Normal Feedwater Flow
- Appendix E – Supplement to LR Section 2.4.1

The following TS are recalculated non-EPU Setpoints:

4.7 TS 3.3.2, Engineered Safety Feature Actuation System (ESFAS) Instrumentation

- Function 1c, Safety Injection - Containment Pressure High (Item 7c, Attachment 1 of EPU LAR)
- Function 1d, Safety Injection – Pressurizer Pressure Low (Item 7d, Attachment 1 of EPU LAR)
- Function 2c, Containment Spray – Containment Pressure High High (Item 7f, Attachment 1 of EPU LAR)
- Function 4c, Steam Line Isolation – Containment Pressure High High (Item 7g, Attachment 1 of EPU LAR)

The following sections support the four functions listed above.

- LR Section 2.4.1 - Reactor Protection, Engineered Safety Features and Control Systems
- Appendix E – Supplement to LR Section 2.4.1

4.8 TS 3.3.2, Engineered Safety Feature Actuation System (ESFAS) Instrumentation, Function 6.e AFW Pump Suction Transfer on Suction Pressure Low (Item 7k, Attachment 1 of EPU LAR, and EPU LAR Supplement 1(Reference 2)) Units 1 and 2

4.9 TS 3.7.5 – Auxiliary Feedwater (Item 16, Attachment 1 of EPU LAR) Units 1 and 2

4.10 TS 3.7.6 – Condensate Storage Tank (Item 17, Attachment 1 of EPU LAR, and EPU LAR Supplement 1) Units 1 and 2

The following lists of LR sections support TS 3.3.2.6e, TS 3.7.5, and TS 3.7.6:

a. Systems & Components

- LR Section 2.2.4 – Safety Related Valves and Pumps
- LR Section 2.3.2 – Offsite Power System
- LR Section 2.3.3 – AC Onsite Power System
- LR Section 2.3.4 – DC Onsite Power System
- LR Section 2.4.1 – Reactor Protection, Safety Features Actuation, and Control Systems
- LR Section 2.5.4.2 – Station Service Water System
- LR Section 2.5.4.5 – Auxiliary Feedwater
- LR Section 2.5.7.1 – Emergency Diesel Fuel Oil Storage and Transfer
- LR Section 2.7.5 – Auxiliary and Radwaste Area and Turbine Areas Ventilation Systems
- LR Section 2.7.6 – Engineered Safety Feature Ventilation System
- LR Section 2.11.1 – Human Factors
- Appendix E, Supplement to LR Section 2.4.1
- LAR 261, Supplement 1
- LAR 261, Supplement 2 (Reference 3)
- Response to Acceptance Questions (Reference 2)

b. Safety Analysis

- LR Section 2.3.5 – Station Blackout
- LR Section 2.5.1.2.1 – Internally Generated Missiles
- LR Section 2.6.1 - Primary Containment Functional Design
- LR Section 2.6.3.2 - Mass and Energy Release Analysis for Secondary System Pipe Ruptures
- LR Section 2.8.5.0 – Non-LOCA Introduction
- LR Section 2.8.5.2.2 - Loss of Non-Emergency AC Power to the Station Auxiliaries
- LR Section 2.8.5.2.3 - Loss of Normal Feedwater Flow
- LR Section 2.8.5.6.2 - Steam Generator Tube Rupture
- LR Section 2.8.5.6.3.3 – Technical Evaluation - SBLOCA
- LR Section 2.8.5.7 – Anticipated Transients Without Scram
- Appendix A – Safety Evaluation Report Compliance

c. Programs/Other

- LR Section 2.3.1 – Environmental Qualification of Electrical Equipment
- LR Section 2.5.1.4 – Fire Protection

4.11 TS 3.3.4, Loss of Power Diesel Generator Start Instrumentation (Item 8, Attachment 1 of EPU LAR) Units 1 and 2

- LR Section 2.3.3 – AC Onsite Power System
- LAR 261, Supplement 2

4.12 TS 3.4.9, Pressurizer (Item 10, Attachment 1 of EPU LAR)

- LR Section 2.8.5.2.2 - Loss of Non-Emergency AC Power to the Station Auxiliaries
- LR Section 2.8.5.2.3 - Loss of Normal Feedwater Flow
- LR Section 2.8.5.0 – Non-LOCA Introduction

4.13 TS 3.4.10, Pressurizer Safety Valves (Item 11, Attachment 1 of EPU LAR)

- LR Section 2.8.5.0 – Non-LOCA Introduction
- LR Section 2.8.5.2.1 - Loss of External Electrical Load, Turbine Trip and Loss of Condenser Vacuum
- LR Section 2.8.5.2.2 - Loss of Non-Emergency AC Power to Station Auxiliaries
- LR Section 2.8.5.2.3 - Loss of Normal Feedwater Flow

4.14 TS 3.7.1, Main Steam Safety Valves (MSSVs) (Item 14, Attachment 1 of EPU LAR)

- LR Section 2.2.4 – Safety-Related Valves and Pumps
- LR Section 2.5.5.1 – Main Steam
- LR Section 2.8.4.2 - Overpressure Protection During Power Operation
- LR Section 2.8.5.0 – Non-LOCA Introduction
- LR Section 2.8.5.2.1 - Loss of External Electrical Load, Turbine Trip and Loss of Condenser Vacuum
- LR Section 2.8.5.6.3.3 - Technical Evaluation - SBLOCA

4.15 TS 3.7.3, Main Feedwater Isolation (Item 15, Attachment 1 of EPU LAR)

- LR Section 2.1.7 – Protective Coating Systems
- LR Section 2.2.4 – Safety-Related Valves and Pumps
- LR Section 2.3.1 – Environmental Qualification of Electrical Equipment
- LR Section 2.5.4.2 – Station Service Water System
- LR Section 2.5.5.4 – Condensate and Feedwater
- LR Section 2.6.1 – Primary Containment Functional Design
- LR Section 2.6.3.2 – Mass and Energy Release Analysis for Secondary System Pipe Rupture
- LR Section 2.6.5 – Containment Heat Removal
- LR Section 2.8.5.6.3.3 – Technical Evaluation - SBLOCA
- LR Section 2.11.1 – Human Factors

5. METHODS AND CODES

LAR 261 was submitted with revised safety analyses that in some cases are a change from the existing approved licensing basis methods and codes for PBNP. The codes (RETRAN, GOTHIC, VIPRE, LOFTTR2) have been previously approved by the NRC on a generic basis, however approval is needed to implement the codes at PBNP. The HELB program

was reconstituted and a new licensing basis is established which requires NRC approval prior to implementation.

Information supporting the use of the VIPRE and RETRAN codes for use at PBNP was submitted as part of the EPU LAR. LR Section 2.8.5.0.9 Computer Codes Used contains the VIPRE and RETRAN code descriptions. LR Section 2.8.3, Thermal and Hydraulic Design, contains supporting information for the use and application of VIPRE. Appendix A of the LR, Safety Evaluation Report Compliance, provides supporting information for code use.

VIPRE (Section A.3 of Appendix A) and RETRAN (Section A.5 of Appendix A) code SER compliance are included for completeness.

GOTHIC is addressed in Primary Containment Functional Design, LR Section 2.6.1. GOTHIC is not included in Appendix A since Appendix A was prepared for events covered by LR Section 2.8.5. The pertinent information on the GOTHIC model is contained in LR 2.6.1.2.1.

As shown in Appendix A, there are no NRC constraints for the use of LOFTTR2.

The applicable codes and the EPU LR sections where they are used are provided below.

5.1 RETRAN

- LR Section 2.8.5.0.9 – Computer Codes Used
- Appendix A – Safety Evaluation Report Compliance (Section A.3, RETRAN for Non-LOCA Safety Analysis)
- LR Section 2.8.4.2 – Overpressure Protection During Power Operation
- LR Section 2.8.5.1.2 – Steam System Piping Failures Inside and Outside Containment
- LR Section 2.8.5.2.1 – Loss of External Electrical Load, Turbine Trip, and Loss of Condenser Vacuum
- LR Section 2.8.5.2.2 – Loss of Non-Emergency AC Power to the Station Auxiliaries
- LR Section 2.8.5.2.3 – Loss of Normal Feedwater Flow

5.2 GOTHIC

- LR Section 2.6.1 – Primary Containment Functional Design
- LR Sub-Section 2.6.1.2.1 - Introduction
- LR Section 2.6.3.1 – M&E Release for a Postulated LOCA
- LR Section 2.6.3.2 – Mass and Energy Release Analysis for Secondary System Pipe Rupture

5.3 VIPRE

- LR Section 2.8.5.0.9 – Computer Codes Used
- Appendix A - Safety Evaluation Report Compliance (Section A.5, VIPRE for Non-LOCA Thermal/Hydraulics)
- LR Section 2.8.3 – Thermal and Hydraulic Design

- LR Section 2.8.5.1.2 – Steam System Piping Failures Inside and Outside Containment

5.4 LOFTTR2

- LR Section 2.8.5.6.2 – Steam Generator Tube Rupture

5.5 High Energy Line Break (HELB) Methodology

- LR Section 2.2.1 – Pipe Rupture Locations and Associated Dynamic Effects.
- LR Section 2.5.1.3 – Pipe Failures

6. EVALUATION OF EPU ANALYSES FOR CURRENT LICENSED POWER LEVEL

Since the units will be operating at current licensed power level with the modifications installed before the transition to EPU, the operating parameters for both current licensed power and proposed EPU power levels are provided below in Table 1-2 and 1-3. For the current licensed power level and the transition to the EPU power level, the fuel reload process is described in Section 7.

Design and Operating Parameters

A comparison of key parameters below shows that the values for the EPU are the same or more limiting than those for operation at current power.

Table 1-1 Key Parameters

Variable	EPU	Current Power
NSSS Power, MWt	1806	1546
Thermal Design Flow, gpm	89,000	89,000
RCS Pressure, psia	2250	2250
Tavg Range, °F	558.0 – 577	558.1 - 574
Steam Flow (max) 10^6 lb/hr	8.12	6.75
Feedwater Temp, °F	390 – 458 (range)	438.1
Tube Plugging Level %	0 - 10	0 - 10

Table 1-2 (EPU Operating Parameters) and Table 1-3 (Current nuclear steam supply systems (NSSS) Parameters) from the PBNP EPU LAR LR are provided below.

Table 1-2

NSSS Design Parameters for Units 1 and 2 EPU

Thermal Design Parameters	Extended Power Uprate			
	Case 1	**Case 2**	**Case 3**	**Case 4**
NSSS Power, MWt	1806	1806	1806	1806
10^6 Btu/hr	6162	6162	6162	6162
Reactor Power, MWt	1800	1800	1800	1800
10^6 Btu/hr	6142	6142	6142	6142
Thermal Design Flow, loop gpm	89,000	89,000	89,000	89,000
Reactor 10^6 lb/hr	69.3	69.3	67.6	67.6
Reactor Coolant Pressure, psia	2250	2250	2250	2250
Core Bypass, %	6.5 (a,b)	6.5 (a,b)	6.5 (a,c)	6.5 (a,c)
Reactor Coolant Temperature, °F				
Core Outlet	597.3 (b)	597.3 (b)	615.3 (c)	615.3 (c)
Vessel Outlet	592.9	592.9	611.1	611.1
Core Average	561.8 (b)	561.8 (b)	581.0 (c)	581.0 (c)
Vessel Average	558.0	558.0	577.0	577.0
Vessel/Core Inlet	523.1 (f)	523.1 (f)	542.9	542.9
Steam Generator Outlet	522.9 (f)	522.9 (f)	542.7	542.7
Steam Generator				
Steam Outlet Temperature, °F	490.8	486.3	511.6 (d)	507.3
Steam Outlet Pressure, psia	626	601	755 (d)	727
Steam Outlet Flow, 10^6 lb/hr	7.36/8.08 (e)	7.36/8.08 (e)	7.39/8.12	7.39/8.11 (e)
Feed Temperature, °F	390.0/458.0	390.0/458.0	390.0/458.0	390.0/458.0
Steam Outlet Moisture, % max.	0.25	0.25	0.25	0.25
Tube Plugging Level, %	0	10	0	10
Zero Load Temperature, °F	547	547	547	547
Hydraulic Design Parameters				
Mechanical Design Flow, gpm per loop	101,200			
Minimum Measured Flow, gpm per loop	93,000			

Notes:

a. Core bypass flow accounts for thimble plugs removed.
b. If thimble plugs are installed, the core bypass flow is 4.5%, core outlet temperature is 595.9°F, and core average temperature is 561.0°F.
c. If thimble plugs are installed, the core bypass flow is 4.5%, core outlet temperature is 613.9°F, and core average temperature is 580.3°F.
d. If a high steam pressure is more limiting for analysis purposes, a greater steam pressure of 813 psia, steam temperature of 520.1°F, and steam flow of 8.13 x 10^6 lb/hr should be assumed. This is to envelope the possibility that the plant could operate with better than expected steam generator performance.
e. Steam flow is affected by the two different feedwater temperatures.
f. Operating temperature for T_{cold} is not to be less than 525°F.

Table 1-3

Information for the Current NSSS Parameters for Units 1 and 2

Thermal Design Parameters	Case 1	Case 2	Case 3	Case 4
NSSS Power, MWt	1546	1546	1546	1546
10^6 Btu/hr	5275	5275	5275	5275
Reactor Power, MWt	1540	1540	1540	1540
10^6 Btu/hr	5255	5255	5255	5255
Thermal Design Flow, loop gpm	89,000	89,000	89,000	89,000
Reactor 10^6 lb/hr	68.8	68.8	67.4	67.4
Reactor Coolant Pressure, psia	2250	2250	2250	2250
Core Bypass, %	6.5	6.5	6.5	6.5
Reactor Coolant Temperature, °F				
Core Outlet	592.0	592.0	607.2	607.2
Vessel Outlet	588.1	588.1	603.5	603.5
Core Average	561.2	561.2	577.2	577.2
Vessel Average	558.1	558.1	574.0	574.0
Vessel/Core Inlet	528.0	528.0	544.5	544.5
Steam Generator Outlet	527.8	527.8	544.2	544.2
Steam Generator				
Steam Outlet Temperature, °F	501.0	497.3	518.2	514.5
Steam Outlet Pressure, psia	687	664	800	775
Steam Outlet Flow, 10^6 lb/hr	6.73	6.72	6.75	6.74
Feed Temperature, °F	438.1	438.1	438.1	438.1
Steam Outlet Moisture, % max.	0.10	0.10	0.10	0.10
Tube Plugging Level, %	0	10	0	10
Zero Load Temperature, °F	547	547	547	547
Hydraulic Design Parameters				
Mechanical Design Flow, gpm per loop	101,200			
Minimum Measured Flow, gpm total	182,400			

Assessment of Applicability of EPU LR Sections to Current Licensed Power Operation

An evaluation of the EPU TS applicability to operation at current licensed power level is provided below. Section 4 in this letter identified the TS that require expedited review to install the EPU modifications on Unit 1 and selected modifications on Unit 2. Both Units were evaluated for operation at current licensed power level and concluded to be acceptable. The results of the evaluations are provided below.

- **LR Section 2.1.7 – Protective Coating Systems**

  The containment post accident temperature profile for EPU indicates a post loss-of-coolant-accident (LOCA) peak temperature of 280°F and then decreasing temperature which drops below 150°F approximately 28 hours after the accident. As indicated in FSAR Chapter 5.6.2.4, testing of inorganic zincs, modified phenolics and epoxy coatings has been performed. The tests indicated that the coatings were resistant (no significant loss of adhesion to the substrate, nor formation of deterioration products) to an environment high temperature (320°F maximum) and alkaline sodium borate. Long-term tests included exposure to a spray solution at 150°F to 175°F for 60 days after being subjected to a design basis accident cycle.

  EPU containment pressure following the LOCA remains bounded by the design basis containment pressure of the protective coating systems.

  Since the EPU evaluation was performed at the higher EPU power, it bounds operation at the current licensed power level for Unit 1. For Unit 2 the current analysis of record (AOR) applies.

- **LR Section 2.2.1 – Pipe Rupture Locations and Associated Dynamic Effects**

  The pipe rupture evaluations provided in LR Section 2.2.1 are based on the EPU operating conditions at the EPU power level that bound operating conditions at the current licensed power level.

  The HELB program was reconstituted to demonstrate continued compliance with prior licensing commitments and to reconstitute missing documentation. A new licensing basis is established that requires NRC review and approval prior to implementation. This new licensing basis is described in LR Sections 2.5.1.3 and 2.2.1. The new HELB licensing basis applies to both Units.

- **LR Section 2.2.4 – Safety Related Valves and Pumps**

  The AFW system is being reconfigured as discussed in LR section 2.5.4.5, "Auxiliary Feedwater." The AFW pump flow rate requirements increase at EPU conditions and new motor-driven (MD) AFW pumps are being installed. Additionally, the system will be unit specific with new piping and several new valves are being added. A revision to the in-service testing (IST) requirements for these changes, including changing the MDAFW pump curve and flow control valves for Units 1 and 2 is necessary to support revised TS 3.7.5.

New fast closing feedwater isolation valves (FWIV) (1/2CS 03124 and 03125) are required to limit the feedwater flow to the containment during a main steam line break (MSLB) event. Accordingly, a revision to the IST requirements for the Unit 1 FWIVs is necessary since the new FWIV are classified as safety-related and support new proposed TS 3.7.3.

The setpoints for the third and fourth banks of Main Steam Safety Valves (MSSVs) are changed from 1125 psig to 1105 psig for EPU. This change has no impact on the ability of the valves to perform their safety function. However, the new setpoints improve the plant response to certain transients. Accordingly, a revision of the IST requirements for the Unit 1 MSSVs is necessary since a setpoint change is required to support TS 3.7.1.

The TS setpoint tolerance for the pressurizer safety valves (PSVs) is being changed. This change has no impact upon the ability of the valves to perform their safety function. However, the new setpoint improves the plant response to certain transients. Accordingly, a revision of the IST requirements for the Unit 1 PSVs is necessary since the change in the setpoint tolerance will be required to support TS 3.4.10.

- **LR Section 2.2.2.5 – Steam Generators and Supports**

  For Unit 1, the evaluation for the steam generator low low level TS has concluded that the EPU analysis bounds operation at current power with the modifications installed. This evaluation includes the Appendix E setpoint uncertainty methodology and the impacts of the modifications on the setpoints.

  For Unit 2, the effects of the proposed modifications in Section 3 of this letter have been assessed and the current setpoint is acceptable.

- **LR Section 2.3.1 – Environmental Qualification of Electrical Equipment**

  The Equipment Qualification (EQ) evaluation provided in LR Section 2.3.1 bounds operation at the current licensed power level since the revised containment pressure and temperature profiles are based on EPU containment analysis which bounds the operation at the current licensed power level as described under LR Section 2.6.1.

  The EQ evaluation provided in LR Section 2.3.1 for HELBs outside containment is based on the EPU operating conditions and mass and energy releases based on the EPU power level, which bound the conditions at the current licensed power level.

  The EQ radiation dose evaluations are based on the higher EPU power level resulting in increased EQ dose which bound the dose at the current licensed power level.

  The evaluations above apply to both Units 1 and 2.

- **LR Section 2.3.2 – Offsite Power System**

  The evaluations of the offsite power system provided in LR Section 2.3.2 apply to Unit 1 at the current licensed power level since the necessary plant modifications required to support EPU will be implemented and operation of the system at the current licensed power level will be within the bounding evaluations at the EPU power level.

- **LR Section 2.3.3 – AC Onsite Power System**
  LAR 261, Supplement 2
  Response to Acceptance Questions

  The evaluations of the AC onsite power system provided in LR Section 2.3.3, LAR 261, Supplement 2, and the NextEra response to acceptance questions apply to Unit 1 at the current licensed power level since the necessary modifications (including the loss of voltage relay time delay changes supporting the proposed change to TS 3.3.4 for both units) required to support EPU will be implemented. Operation of the system at the current licensed power level will continue to be within the bounding evaluations at the EPU power level.

- **LR Section 2.3.4 – DC Onsite Power System**

  The evaluations of the DC onsite power system provided in LR Section 2.3.4 apply to Unit 1 at the current licensed power level since the necessary modifications required to support EPU will be implemented and operation of the system at the current licensed power level will continue to be within the bounding evaluation at the EPU power level.

- **LR Section 2.3.5 – Station Blackout**
  LAR 261, Supplement 1

  The evaluation of station blackout (SBO) provided in LR Section 2.3.5 and LAR Supplement 1 apply to both Units 1 and 2 at the current licensed power level since the evaluation bounds the current power conditions and is based upon the revised AFW system and the revised condensate storage tank (CST) inventory for EPU. The proposed changes to TS 3.7.5 and TS 3.7.6 are required to support the SBO evaluation for implementation of the AFW system changes for Units 1 and 2.

- **LR Section 2.4.1 – Reactor Protection, Engineered Safety Features Actuation, and Control Systems**
  LAR 261, Supplement 1

  LR Section 2.4.1 covers instrumentation and control (I&C) aspects required for approval of the EPU. The pertinent sections of the LR Section 2.4.1 were reviewed and it was concluded that Unit 1 and Unit 2 operation with the limited modifications installed is acceptable using the methodology contained in Appendix E.

  Since this report only covers a subset of the functions (SG low-low level, low Tavg, pressurizer level, etc) and not all (i.e. OTΔT, OPΔT, high steam flow, etc), this LR section is included so pertinent information is available for review.

  Unit 2 I&C has been reviewed and concluded to be acceptable for operation at current licensed power level following the limited modifications being installed.

- **LR Section 2.4.2.1 – Plant Operability (Margin to Trip)**

  The purpose of the plant operability/margin to trip analysis is to verify that sufficient margin exists to the relevant RPS/ESFAS setpoints during and following normal operating (Condition I) transients below.

  a. 5%/minute unit loading and unloading
  b. 10% step load decrease
  c. 10% step load increase
  d. Large load rejection
  e. Turbine trip without reactor trip from the P-9 setpoint
  f. Normal reactor trip from full power

  The evaluation of these Condition I transients demonstrates that the analysis at the higher EPU power level bounds operation at the current licensed power level. The use of higher initial power and the accompanying temperatures, etc., are conservative with respect to the proposed operation of Unit 1. The current P-9 setpoint of 50% licensed power level is acceptable.

  For Unit 2, the current AOR is not impacted by the proposed modifications in Section 3 of this letter, so the AOR remains valid.

- **LR Section 2.4.2.2 – Pressure Control Component Sizing**

  The purpose of the component sizing calculations is to verify the adequacy of the installed capacities of the following NSSS pressure control components.

  a. Pressurizer PORVs
  b. Pressurizer spray valves
  c. Pressurizer heater
  d. Condenser steam dumps valves

  These components have been shown acceptable since the analysis in LR Section 2.4.2.1, including the margin to trip analysis, are applicable to both EPU and current licensed power level for Unit 1 with the modifications installed.

  Since the current AOR is applicable for Unit 2 at current licensed power level following the installation of the modifications in Section 3 of this letter, the component sizing evaluations for the AOR remain valid.

- **LR Section 2.5.1.2.1 – Internally Generated Missiles**

  The internally generated missile evaluations provided in LR Section 2.5.1.2.1 apply since they are based upon the EPU operating conditions which bound the conditions at the current licensed power level. This evaluation applies to both units.

- **LR Section 2.5.1.3 – Pipe Failures**

  The pipe failure evaluations provided in LR Section 2.5.1.3 for HELBs outside containment are based upon EPU operating conditions. Mass and energy releases are

based on the EPU power level which bound the conditions at the current licensed power level. These evaluations apply to both units.

The new licensing basis is described in this LR Section 2.5.1.3 and in LR Section 2.2.1, "Pipeline Rupture Locations and Associated Dynamic Effects."

- **LR Section 2.5.1.4 – Fire Protection**

  The evaluation of fire protection provided in LR Section 2.5.1.4 applies to Unit 1 and 2 at the current licensed power level since the evaluation bounds the current licensed power conditions and is based upon the revised AFW system.

- **LR Section 2.5.4.2 – Station Service Water System**

  Component cooling water heat exchangers are primarily affected by increased reactor decay heat at the proposed EPU power level transferred by the residual heat removal heat exchangers to the component cooling water system during cooldown and accidents. The current service water flow rates are capable of removing the required heat loads from the component cooling water heat exchangers at the proposed EPU power level and bound operation at the current licensed power level.

  Additional energy released to containment during accident events due to the higher EPU power level is removed by means other than the containment fan coolers, which results in reduced required heat removal by the containment fan coolers and bounds operation at the current licensed power level.

  For additional discussion see LR section 2.6.1, Primary Containment Functional Design.

  As discussed in LR Section 2.5.4.2, Generic Letter 96-06 questioned whether the higher heat loads at accident conditions could cause voiding and subsequent water hammer during the assumed coincident loss of offsite power transient. Reduced flow was evaluated, particularly to the containment fan coolers, as a result of two-phase flow due to boiling in the service water cooling flow to heat exchangers. This analysis was reviewed against the EPU containment environment, service water flow rates, and heat removal from the containment fan coolers. The evaluation was performed at the higher EPU power level and bounds operation at the current licensed power level. The above evaluations apply to both Units 1 and 2.

- **LR Section 2.5.4.5 – Auxiliary Feedwater**

  LAR 261, Supplement 1
  Response to Acceptance Questions

  The AFW system evaluations provided in LR Section 2.5.4.5, Supplement 1, and NextEra's response to acceptance questions apply to Units 1 and 2 and bound operation at the current licensed power level.

  The implementation of the AFW modifications for Units 1 and 2 require revisions to TS 3.3.2 ESFAS Function 6.e, TS 3.7.5, and TS 3.7.6.

The AFW changes required to support operation at the higher EPU power level requires an increase in the minimum AFW flow to mitigate the limiting accident events for loss of non-emergency AC power to the station auxiliaries (LOAC) and loss-of normal-feed (LONF) at EPU conditions and bound operation at the current licensed power level as discussed under LR Section 2.8.5.2.2 and LR Section 2.8.5.2.3 below.

The AFW system changes also result in changes to the maximum AFW flow to the steam generators following MSLB and steam generator tube rupture (SGTR) accident conditions and have been evaluated at EPU conditions and for operation at the current licensed power level for Units 1 and 2 as discussed under LR Sections 2.6.1 and 2.8.6.2 below.

An increase in the minimum CST inventory for Units 1 and 2 is required to support the EPU. The required inventory bounds the inventory required for operation at the current licensed power level. Approval of TS 3.7.6 is required to support implementation of the AFW system modifications for Units 1 and 2.

- **LR Section 2.5.5.1 – Main Steam**

The setpoints for the third and fourth banks of MSSVs are changed from 1125 psig to 1105 psig for EPU and bound operation of Unit 1 at the current licensed power level as discussed in LR Sections 2.8.4.2 and 2.8.5.2.1 below. In addition, the evaluation shows that the existing MSSV capacities are acceptable for operation under EPU conditions as discussed in LR Section 2.5.5.1, "Main Steam System."

No change is required for Unit 2 for operation under the current licensed power level since the current analyses of record apply as discussed under LR Sections 2.8.4.2 and 2.8.5.2.1 below.

- **LR Section 2.5.5.4 – Condensate and Feedwater**

The current containment pressure response analysis in Chapter 14 FSAR relies on the feedwater regulating valves (FRVs), including bypass valves, as the primary means of feedwater (FW) isolation and the FW pumps and discharge valves plus tripping of the condensate (CS) and heater drain (HD) pumps as the backup means of FW isolation. For EPU, the new safety-related feedwater isolation valves (FIVs) will provide the primary means for FW isolation with the FRVs, including bypass valves, as the backup for FW isolation. This is required to minimize the mass and energy release from the FW system following an MSLB inside containment (LR Section 2.6.3.2 "Mass and Energy Release Analysis for Secondary System Pipe Ruptures"). No credit is taken for the isolation function of tripping the FW pump, closure of the FW discharge valves and the tripping of the CS and HD pumps in the mass and energy release analysis for a MSLB. Therefore, current TS 3.7.3 must be revised to reflect the addition of the FIVs as the primary means for FW isolation, the FRVs and bypass valves as the back up means for FW isolation and removal of the tripping of the FW pumps, CS pumps and HD pumps.

The replacement CS and FW pumps are being installed during the spring 2010 Unit 1 refueling outage prior to the EPU approval. Since the replacement CS and FW pumps have a much larger capacity than the current pumps, addition of the MFIVs are required in order to reduce the mass and energy releases as discussed under LR Section 2.6.3.2.

The safety function (fast closure upon a safety injection signal) and performance of the FWIVs is not impacted by operation at the current licensed power level and therefore, is bounded by the EPU analysis.

The Unit 2 condensate and feedwater pumps and FIV modifications are not being installed prior to EPU so the current AOR apply to Unit 2.

- **LR Section 2.5.7.1 – Emergency Diesel Fuel Oil Storage and Transfer Response to Acceptance Questions**

  The emergency diesel generator (EDG) fuel oil storage and transfer evaluation applies to both Units 1 and 2 for the EPU conditions and bounds operation at the current licensed power level. The EDG loading and fuel oil impacts are primarily due to the implementation of the new AFW motor-driven pumps and the LAR 241 changes.

- **LR Section 2.6.1 - Primary Containment Functional Design**

  The key parameters for containment analysis (heat sinks, actuation setpoints, containment free volume etc.) were reviewed and are unaffected for both Units 1 or 2 operation with the modifications installed at current licensed power level.

  Another key parameter for containment response is mass and energy (M&E) releases. LR Section 2.6.3.1 (M&E Releases for a postulated LOCA) and LR Section 2.6.3.2 (M&E Release for Secondary Pipe Ruptures) are addressed in subsequent sections.

- **LR Section 2.6.3.1 - M&E Release for a Postulated LOCA**

  A comparison of critical parameters for long-term LOCA M&E was performed to determine applicability of the EPU analyses in support of operation of Unit 1 at licensed power level with the modifications installed. The power level, vessel average temperature, vessel flow, and the secondary side conditions, including feedwater temperature for the EPU conditions, bound operation at current licensed power level. Therefore operation of Unit 1 at current licensed power level with the EPU modifications installed is acceptable with respect to long-term LOCA M&E.

  Short-term LOCA M&E releases used in sub compartment analyses are most sensitive to a lower fluid temperature. A comparison of fluid temperatures used in the analysis shows 558.0°F (EPU) versus 558.1°F (current). This difference is not significant and the short-term M&E releases for the EPU are acceptable and bounding.

  None of the proposed modifications in Section 3 above for Unit 2 affect the current AOR, so operation at licensed power level following the installation of these modifications is acceptable.

- **LR Section 2.6.3.2 - Mass and Energy Release Analysis for Secondary System Pipe Ruptures**

  The Unit 1 M&E releases used for the EPU analysis are applicable for supporting operation of Unit 1 at the licensed power level with the modifications installed. A comparison of key parameters (i.e. power level, AFW flows, safety injection flows, refueling water storage tank [RWST] temperature, etc.) has resulted in EPU being bounding with respect to operation at licensed power level following the spring 2010 outage.

  For Unit 2, a review of similar parameters concludes the analysis of record remains valid. This assessment includes a review of limiting single failures and concludes the appropriate single failure for the AOR was used.

- **LR Section 2.6.5 – Containment Heat Removal**

  The evaluation provided in LR Section 2.6.5 applies to Unit 1 since the EPU containment analysis bounds operation at the current licensed power level as described above.

  The Unit 2 containment heat removal system is not impacted since the current analysis of record will apply for Unit 2 as discussed under Section 2.6.1 above.

- **LR Section 2.7.5 – Auxiliary and Radwaste Area and Turbine Areas Ventilation Systems**
  Response to Acceptance Questions

  The impact to the primarily auxiliary building (PAB) ventilation is the installation of the new MDAFW pumps for both Units 1 and 2. The evaluation is based on the maximum motor horsepower demand and bounds operation at the EPU and current licensed power levels.

- **LR Section 2.7.6 – Engineered Safety Feature (ESF) Ventilation System**

  The evaluations provided in LR Section 2.7.6 apply to EPU and concluded that no changes are required to the ESF ventilation system. The EPU evaluation bound operations at the current licensed power level. Refer to LR Section 2.7.5 for the impact of the new MDAFW pumps for Units 1 and 2.

- **LR Section 2.8.3 – Thermal and Hydraulic Design**

  LR Section 2.8.3 is an assessment of fuel thermal and hydraulic design. Portions of this section provide supporting information for the review of other sections listed in this submittal including the applicability for the VIPRE code as it applies to LR Section 2.8.5.1.2, Steam System Piping Failures Inside and Outside Containment.

- **LR Section 2.8.4.2 - Overpressure Protection During Power Operation and LR Section 2.8.5.2.1 - Loss of External Electrical Load, Turbine Trip and Loss of Condenser Vacuum**

  The overpressure protection during power operation/loss of external electrical load, turbine trip and loss of condenser vacuum transients have been reviewed with respect to EPU operation versus operation at licensed power level with the modifications installed. Key parameters such as power, temperature, setpoints, flow, etc., have been reviewed. The EPU analysis bounds operation of Unit 1 at current licensed power level.

  For Unit 2, the proposed limited modifications in Section 3 above have been assessed for operation at current licensed power level and do not impact the AOR. The AOR remains valid.

- **LR Section 2.8.5.0 Non-LOCA Introduction**

  This section provides information regarding all Non-LOCA events contained in Section 2.8.5.0. Since some portions of Section 2.8.5.0 are applicable to this expedited review, Section 2.8.5.0 was included to provide pertinent supporting information for the review including code information for RETRAN and VIPRE.

- **LR Section 2.8.5.1.2 - Steam System Piping Failures Inside and Outside Containment**

  With the noted TS changes approved and the related plant modifications complete, the steamline break (SLB) analyses that were performed to support the EPU conditions will also support plant operation at the current licensed power level of 1540 MWt. For Unit 1, the EPU analyses support the current power conditions because the EPU core power level is considerably higher (1800 MWt vs. 1540 MWt), the EPU maximum full power vessel average temperature is bounding (577°F vs. 574°F), all plant modifications related to the TS changes are accounted for in the EPU analysis.

  For Unit 2, the proposed limited modifications in Section 3 above have been assessed for operation at current licensed power level and do not impact the AOR, therefore the AOR remains valid.

- **LR Section 2.8.5.2.2 - Loss of Non-Emergency AC Power to the Station Auxiliaries and LR Section 2.8.5.2.3 - Loss of Normal Feedwater Flow**

  With the listed TS changes approved and the related plant modifications for Unit 1 complete, the LONF and LOAC analyses that were performed to support the EPU conditions also support plant operation at the current licensed power level of 1540 MWt. The EPU analyses support the current power conditions because the EPU power level is considerably higher (1800 MWt vs. 1540 MWt), the EPU maximum full power reactor vessel average temperature is bounding (577°F vs. 574°F), plant modifications related to the TS changes are accounted for in the EPU analysis, and other input parameters critical to the analysis are either bounding or consistent with current operating conditions.

Unit 2 is acceptable for operation with the proposed limited modifications in Section 3 above, since the performance of the AFW system will provide at least the minimum flow assumed in the AOR. Therefore, the AOR remains valid.

- **LR Section 2.8.5.6.2 - Steam Generator Tube Rupture**

  A comparison of parameters for EPU and current licensed power level with the proposed modifications installed for Unit 1, concludes that for the licensing basis hand calculation input to dose analysis and for the supplemental input to dose analysis, the EPU LAR analysis bounds the operation of Unit 1 following the spring 2010 outage. The higher EPU power level and subsequent increased mass releases result in the EPU analyses being bounding.

  Unit 2, with only a subset of the modifications in Section 3 above, remains bounded by the EPU analysis.

- **LR Section 2.8.5.6.3.3 – Technical Evaluation – SBLOCA**

  For Unit 1 the EPU small-break-loss-of-coolant accident (SBLOCA) analysis will bound operation at current licensed power level. Since initial EPU power is higher than current licensed power level, the EPU analysis is more conservative than an analysis done at current licensed power level. As with most accident analyses, key parameters are tracked as part of the approval reload process (WCAP 9272-P-A). The same will apply for the SBLOCA.

  Changes to the AFW parameters applicable to SBLOCA (i.e., AFW flow, AFW temperature, AFW initiation signal and AFW pump start delay time) due to the AFW modifications do not impact the current Unit 2 SBLOCA AOR, since the analysis effectively models no AFW flow. Therefore, the current Unit 2 SBLOCA AOR remains applicable after installation of the modifications listed in Section 3 of this letter.

- **LR Section 2.8.5.7 – Anticipated Transients Without Scram**

  The anticipated transients without scram (ATWS) analysis that was performed to support the EPU conditions supports plant operation at the current licensed power level of 1540 MWt. The EPU analysis supports the current power because the proposed EPU power level is considerably higher (1800 MWt vs. 1540 MWt), the EPU maximum full power vessel average temperature is bounding (577°F vs. 574°F), plant modifications related to the TS changes are accounted for in the EPU analysis, and all other input parameters critical to the analysis are either bounding or consistent with current operating conditions.

  Unit 2 is acceptable for operation with the proposed modifications in Section 3 of this letter, since the performance of the AFW system will provide the required flow assumed in the AOR. Therefore, the AOR remains valid.

- **LR Section 2.11.1 – Human Factors**

  The Human Factors evaluations provided in LR Section 2.11.1 apply to the changes being implemented to Units 1 and 2 at the current licensed power level.

- **Appendix A – Safety Evaluation Report Compliance**

  Appendix A is the SER Compliance and contains supporting information for the use of RETRAN and VIPRE.

- **Appendix E – Supplement to LR Section 2.4.1**

  Appendix E is a supplement to LR Section 2.4.1 and contains the setpoint methodology that applies to both units at EPU and current licensed power level.

7. NUCLEAR DESIGN

Westinghouse reload methodology is followed for each fuel reload and is documented in WCAP-9272-PA. An evaluation is performed for each reload to confirm the existing safety analysis. The safety analyses performed for the EPU LAR is consistent with this methodology in that bounding safety parameters are selected. During each reload evaluation, when all reload safety related parameters for a given accident are bounded, the reference safety analyses is valid. There may be occasions when a given reload parameter is not bounded. If this occurs, further evaluation is necessary. Further evaluation may indicate that additional analyses are required. The process by which exceptions to the bounding analyses is followed is outlined in Chapter 5 of WCAP-9272-PA.

The same process will be followed for Unit 1 reload for the spring 2010 outage. The fuel assembly design is not changing for EPU. The loading pattern and energy requirements will be selected based upon expected plant operation for the next cycle. This operation will entail operation at current licensed power level for a specified time and a burnup window selected for the transition to operation at uprated power. To support this reload plan, two sets of nuclear parameters will be assessed; the first for operation at current licensed power level and the second for EPU operation. Most of the key safety parameters for EPU, Table 2.8.2.2, show little to no change relative to the current design. The loading pattern for Unit 1 reload will be evaluated against the parameter values for both the current power level and the EPU. Changes in parameters will be assessed against the AORs using the reload methodology of WCAP-9272-PA, as previously described.

Unit 2 will not be affected since the existing reload plan remains valid for continued operation at current licensed power level and it is expected that the EPU will be approved prior to the next scheduled refueling outage for Unit 2 in spring 2011.

Table 2.8.2-2
Range of Key Safety Parameters

Safety Parameter	Current Design Values		EPU Analysis Values	
Reactor Core Power (MWt)	1540		1800	
Core Average Coolant Temperature, HFP (°F)	577.1		581	
Coolant System Pressure (psia)	2250		2250	
Most Positive MTC (pcm/°F)	≤ + 5.0 (Power < 70%) ≤ 0.0 (Power ≥ 70%)		≤ + 5.0 (Power < 70%) ≤ 0.0 (Power ≥ 70%)	
Most Positive MDC ($\Delta K/g/cm^3$)	0.43		0.43	
Doppler Temperature Coefficient (pcm/°F)	-2.90 to -0.91		-2.90 to -0.91	
Doppler Only Power Coefficient (pcm/%Power)	(See below)		(See below)	
Least Negative, HFP to HZP	-9.55 to -6.05		-9.55 to -6.05	
Most Negative, HFP to HZP	-19.40 to -12.6		-21.5 to -14.7	
Beta-Effective	0.0043 to 0.0072		0.0043 to 0.0072	
Normal Operation $F^N_{\Delta H}$ (with uncertainties)	1.77		1.68	
Required Shutdown Margin (%Δρ)	3.10		2.00	
Normal Operation $F_Q(Z)$	2.60		2.60	
	Fraction of Rod Insertion	Rod Worth (%Δk)	Fraction of Rod Insertion	Rod Worth (%Δk)
Trip Reactivity versus Rod Position	0.00	0.000	0.00	0.000
	0.10	0.035	0.10	0.035
	0.20	0.075	0.20	0.075
	0.50	0.150	0.50	0.150
	0.60	0.250	0.60	0.250
	0.80	0.750	0.80	0.750
	0.90	3.000	0.90	3.000
	0.96	4.500	0.96	4.500
	1.00	5.000	1.00	5.000
Rod Ejection	(See Below) BOL	(See Below) EOL	(See Below) BOL	(See Below) EOL
Maximum Ejected Rod Worth (%Δρ)	0.79 (HZP)	0.93 (HZP)	0.79 (HZP)	0.93 (HZP)
	0.40 (HFP)	0.42 (HFP)	0.40 (HFP)	0.42 (HFP)

8. UNIT 2

The redesign of the AFW and changes in settings to the loss of voltage relays are such that changes on both units must be made simultaneously. Since the AFW system and loss of voltage relay setting changes are being implemented on Unit 1 during the spring 2010 outage, the applicable AFW and loss of voltage relay setting changes for Unit 2 must also be completed at that time.

As part of the expedited review, Unit 2 TS 3.7.5 AFW, TS 3.7.6 CST, TS 3.3.2 ESFAS function 6e AFW pump suction transfer on suction pressure low, and TS 3.3.4, Loss of Power Diesel Generator Start Instrumentation, need to be approved for Unit 2 to support implementation of AFW system and loss of voltage relay time delay setting changes.

The evaluations contained in Section 6 address Unit 2 at the current licensed power level with the modifications listed in Section 3 installed. The conclusion of these evaluations is that Unit 2 operation at the current licensed power level is acceptable with the redesigned AFW system and loss of voltage relays.

9. CONCLUSION

As previously discussed in this report, operation of Unit 1 and Unit 2 at current licensed power level following the implementation of the modifications in Section 3 above and approval of the TS, including the appropriate LR sections and methods, is acceptable.

10. REFERENCES

1. FPL Energy Point Beach, LLC, Letter to NRC, "License Amendment Request 261, Extended Power Uprate (ML091250564)," April 7, 2009.

2. NextEra Energy Point Beach, LLC, Letter to NRC, "License Amendment Request 261 Supplement 1, Extended Power Uprate," June 17, 2009.

3. NextEra Energy Point Beach, LLC, Letter to NRC, "License Amendment Request 261 Supplement 2, Extended Power Uprate," June 17, 2009.

4. NRR Office Instruction "LIC-112 Power Uprate Process," February 17, 2009.

5. Public meeting between NRC and NextEra Energy Point Beach, LLC, "Point Beach Extended Power Uprate and Alternate Source Term Review Planning Meeting Presentation," August 6, 2009.

6. NRC letter to NextEra Energy Point Beach, LLC, "Point Beach Nuclear Plant, Units 1 and 2 – Extended Power Uprate (EPU) Acceptance Review," August 25, 2009.