November 21, 2009

NRC 2009-0116
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
Response to Request for Additional Information

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 October 22, 2009, Point Beach Nuclear Plant, Units 1 and 2 - Request for Additional Information from Balance of Plant Branch RE: Auxiliary Feedwater (TAC Nos. ME1081 and ME1082) (ML092930834)

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

The NRC staff determined that additional information is required (Reference 2). Enclosure 1 provides the NextEra response to this request. Enclosure 2 provides figures associated with the response to request for additional information (RAI) Question SBPB - AFW - RAI - 4. Enclosure 3 provides the pump curves for the new motor-driven auxiliary feedwater (MDAFW) pumps in response to RAI Question SBPB - AFW - RAI - 6.

This letter contains no new Regulatory Commitments and no revisions to existing Regulatory 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 for 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 November 21, 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
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

The NRC staff determined that additional information is required (Reference 1) to enable the staff's continued review of the auxiliary feedwater system (AFW) portion of License Amendment Request (LAR) 261, Extended Power Uprate (Reference 2). The following information is provided by NextEra Energy Point Beach, LLC (NextEra) in response to the NRC staff's request.

SBPB - AFW - RAI - 1

In NUREG-0800, under Section 5.4.7, Residual Heat Removal System, the Branch Technical Position (BTP) provides guidance to the industry on meeting the requirements for shutdown cooling. The BTP permits operation at hot shutdown for at least 4 hours followed by cool down to the residual heat removal cut-in temperature from the control room with only safety grade equipment, assuming the worst-case single active failure. Normal instrument air supplies the motive force to operate the auxiliary feedwater (AFW) pump mini-flow recirculation valve and the flow control valves to steam generators (SGs). On loss of instrument air (IA) the mini flow recirculation valve fails closed, and the flow control valves to SGs fail open. The licensee has a back-up safety-related source of bottled air that can last for 4 hours.

Request

a) *Based upon the proposed modification, describe the plant's licensing basis requirements for shutdown cooling, and the role that the new motor driven auxiliary feedwater (MDAFW) pumps will have.*

b) *If operator action is credited to control flow once IA is depleted, describe the operator actions credited to perform this function in sufficient detail for the staff to perform a human factors evaluation.*

NextEra Response to SBPB - AFW - RAI - 1a

Safe shutdown for safety analysis purposes is defined as hot shutdown. However, the capability to cool down to the residual heat removal (RHR) cut-in temperature is demonstrated as part of the safe shutdown analysis for fire protection. The current AFW system design permits operation at hot shutdown for at least four hours followed by cool down to the RHR cut-in temperature from the control room with only safety grade equipment, assuming the worst-case single active failure in accordance with Branch Technical Position (BTP) 5-4. Both of the existing motor-driven auxiliary feedwater (MDAFW) pumps (shared under the current design) are credited in meeting these design criteria for a single unit. The proposed new configuration for the system will meet these criteria.

The new AFW system for each unit will consist of one turbine-driven pump system and one electric-driven pump system, pump suction and discharge piping, and the controls and instrumentation necessary for operation of the system. As part of the EPU modification, each of the new MDAFW pumps will have the capability to supply both of its associated steam generators (SG) through flow control valves. The two flow control valve setpoints will be set to initially provide each SG with approximately one-half of that unit's MDAFW pump flow. The two new MDAFW pumps will be of higher capacity (275 gpm each at the lowest SG safety valve pressure setpoint) to address EPU flow requirements. The system is designed to ensure that adequate auxiliary feedwater is supplied to the steam generators for heat removal under circumstances where normal feedwater is lost, including the loss of offsite power.

NextEra Response to SBPB - AFW - RAI - 1b

Each new MDAFW pump will have two air-operated flow control valves (one to each associated SG) and two air-operated, mini-recirculation valves (in parallel). Each existing turbine-driven auxiliary feedwater (TDAFW) pump has two motor-operated flow control valves (one to each associated SG) and one air-operated mini-recirculation valve.

The two flow control valves for each new MDAFW pump will fail open on loss of air pressure. These flow control valves will be provided with a backup air supply in the event of a loss of instrument air. This backup, safety related air supply will also supply the pump's fail closed minimum recirculation air-operated valves (AOVs). The backup air supply for each new MDAFW pump will be designed to accommodate up to 24 hours of operation. However, from a licensing basis perspective, only four hours of operation on the backup air supply is credited. The system design will allow the pump to continue to run (prevent pump damage) and feed the steam generators without local manual action for design basis and beyond design basis events.

The TDAFW pump mini-recirculation valves are currently provided with a backup air accumulator sized for two hours of operation following a loss of normal air supply. A new backup, safety-related pneumatic supply will be added to the TDAFW pump backup air supply. The new backup supplies will ensure at least 24 hours of operation of the TDAFW pump mini-recirculation valves in the event of a loss of instrument air, with only four hours credited from a licensing basis perspective. These safety related, backup air supplies eliminate the need to credit operator action to gag open the MDAFW pump and TDAFW pump mini-recirculation valves.

In the event of loss of the normal and backup air supplies, abnormal operating procedure (AOP) steps will direct operator action to manually control the MDAFW and TDAFW pump minimum recirculation valves and to throttle the MDAFW pump flow control valves to a position consistent with the decay heat requirements.

SBPB - AFW - RAI - 2

The licensee has proposed a reconstituted high-energy line break (HELB) analysis for outside containment, but requires the Nuclear Regulatory Commission (NRC) approval prior to implementation. The new assessment of the dynamic effects of postulated piping failures in *fluid systems outside containment will continue to meet the requirements of Point Beach Nuclear Plant General Design Criteria 40. The licensee states that a number of postulated main steam breaks and cracks were reduced by the change in break postulation methodology. The licensee has installed jet impingement shields, pipe whip restraints and flood mitigation features as protection for the effects of piping failures. The new MDAFW pumps will be installed in a new location in the primary auxiliary building (PAB). Feedwater lines, letdown, and main steam transit through the PAB and may pose a HELB potential threat.*

Request

Since the reconstituted HELB has not yet been approved by the NRC, provide an evaluation on the new MDAFW pumps exposure to HELB based upon the current approved HELB analysis. Identify the high energy lines in the PAB and potential interaction with the new MDAFW pumps. Does the new AFW pump modification rely on the new HELB analysis to meet licensing basis?

NextEra Response to SBPB - AFW - RAI - 2

Based on the current licensing basis, boric acid evaporator rooms where the new MDAFW pumps will be installed are not subject to high energy line break (HELB) temperature or pressures. The PBNP design criteria for system piping to be considered high energy is 200°F and 275 psig. Based upon the current approved HELB analysis, the environmental parameters for the new MDAFW pump motor locations are as follows:

- Temperature
    - o The normal PAB maximum temperature is 85°F.
    - o Maximum temperature is less than 130°F.
    - o The PAB Elevation 8' location of MDAFW pump motors is not subject to high energy line break (HELB) temperatures.
- Pressure
    - o The normal PAB pressure is slightly less than atmospheric.
    - o The PAB Elevation 8' location of MDAFW pump motors is not subject to HELB pressurization.

The only high energy lines in the PAB are main steam (including the supply to the auxiliary feedwater pump turbines), feedwater and chemical and volume control system (CVCS) letdown. For the existing, as well as the new, HELB analyses, all of the postulated HELB events in the PAB occur at higher elevations in the building and do not propagate to the lower elevations such as the PAB Elevation 8' location of the new MDAFW pump motors.

Based on the above, the new AFW pump modification does not rely on the new HELB analysis to meet the current PBNP HELB licensing basis.

SBPB - AFW - RAI - 3

The licensee's internal flooding basis was initiated by a 1972 Atomic Energy Commission generic communication request to determine whether a failure of non-category I (seismic) *component could result in a flooding condition that could adversely affect equipment needed to get the plant to safe shutdown. The licensee is modifying the AFW system with the installation of new MDAFW pumps and suction piping in the former boric acid evaporator rooms. The modification has potential effects on equipment and floor drains system to prevent internal flooding.*

Request

Evaluate the effects on the internal flooding analysis with the new AFW modifications.

NextEra Response to SBPB - AFW - RAI - 3

The changes and modifications required for EPU implementation were evaluated per the requirements of the Final Safety Analysis Report (FSAR) Appendix A.7, Plant Internal Flooding, to assess whether the existing design and licensing basis internal flooding evaluations are affected. This review concluded that the existing internal flooding evaluation and conclusions are not changed and that the existing flood mitigation features incorporated into the plant design continue to be adequate for EPU with the new AFW modifications.

SBPB - AFW - RAI - 4

The AFW pumps will be protected by a low pressure switch on the suction lines to each individual pump. However, there is time delay on the pump trip initiation. This same low pressure sensor also signals a swap-over from the condensate storage tank (CST) to the safety-related service water (SW) supply. The license allows sufficient time for the swap-over to occur, and if suction pressure is not restored, the AFW pump is tripped. In the event the nonsafety-related portion of the suction line is lost, the remaining section of protected piping needs to have sufficient supply of water to protect the pumps from damage and tripping prior to swapping over to SW.

Request

Provide details on how the logics and timing was developed for the low pressure swap-over and trip circuitry to avoid tripping the AFW pumps while still protecting the pumps from loss of suction supply, to include showing the protected piping has sufficient volume for the swap-over to occur, or trip the pump prior to damage from loss of supply.

NextEra Response to SBPB - AFW - RAI - 4

The logic and timing of the low suction pressure suction switchover design for the TDAFW and MDAFW pumps is described below.

1. The volume of the protected portion of the pump suction piping is determined by review of the physical layout of the suction piping.

2. The water consumption is determined for two scenarios; pump startup coincident with the loss of suction supply and loss of suction supply with pumps in operation.

3. The low suction pressure signal initiates two time delay relays.

4. The first time delay relay initiates opening of the SW suction supply valve. This time delay is set long enough to avoid spurious operation of the SW suction supply valve during normal pump startup transients.

5. The second time delay initiates trip of the affected AFW pump if the transfer to the SW suction supply is not effective in raising the suction pressure above the low suction pressure trip setpoint. This time delay is set long enough to allow the SW suction supply valve to open far enough to meet the water consumption requirements of the AFW pump. The maximum delay setting ensures that the pump trips prior to the suction supply being consumed.

Figures 1 and 2 in Enclosure 2 provide a diagram of the suction switchover and pump trip logic and the approach used in establishing the suction pressure time delays.

<u>SBPB - AFW - RAI - 5</u>

The amendment states that in the event of evacuation of the main control room, the AFW system shall be capable of manual initiation to provide feedwater to a SG over the range from hot shutdown to cold shutdown conditions, and achieve cold shutdown within 72 hours. The AFW modification will maintain the required local controls for the MDAFW and turbine-driven auxiliary feedwater (TDAFW) pumps and associated valves. The AFW modification will ensure that either AFW pump system can supply the required AFW flow from outside the control room.

<u>Request</u>

For a main control room evacuation, describe the credit taken for the currently installed MDAFW that will become standby steam generator (SSGs) pumps, and the design capabilities of the new MDAFW pumps for decay heat removal following control room evacuation to ensure the same capabilities are maintained.

<u>NextEra Response to SBPB - AFW - RAI - 5</u>

PBNP FSAR Section 7.1.2 states:

"The plant is equipped with a common control room which contains those controls and instrumentation necessary for operation of each unit's reactor and turbine generator under normal and accident conditions. The control room is continuously occupied under all operating and accident conditions, except for the special case of a control room fire forcing evacuation and alternate shutdown from outside the control room. No other accident is required to be assumed during a control room evacuation due to fire."

PBNP Safe Shutdown Analysis Report (SSAR) Section 5.3.1 states:

"Alternative Shutdown, in accordance with Section III.G.3 of 10 CFR 50, Appendix R, is relied upon for postulated fires in the...Control Room."

PBNP SSAR Section 5.3.1.1.4 states:

"The reactor heat removal function is accomplished by the following actions:

a. Establishing and controlling auxiliary feedwater flow to the steam generators by:

- Manually aligning steam to the Turbine Driven Auxiliary Feedwater pumps from the "B" Steam Generators by local manual operator action.
- Manually aligning the Turbine Driven Auxiliary Feedwater pumps to feed the "B" Steam Generators (the "B" Steam Generators are the only ones provided with process monitoring instrumentation that can be relied upon post-fire)."

Under the current licensing basis, the existing MDAFW pumps are not credited for a control room evacuation event as a result of a fire. However, the capability to operate these pumps locally is provided. Under the EPU licensing basis, neither the existing nor the new MDAFW pumps are credited for control room evacuation event as a result of a fire.

However, similar to the existing common MDAFW pumps, the new MDAFW pumping system includes the following provisions so the system can supply AFW flow from outside the control room:

- A control panel is provided near each MDAFW pump that includes a transfer switch (to allow controls for the pumps to be transferred from the control room to the panel) and pushbuttons to start and stop the pump.
- Handwheels on the recirculation valves, discharge flow control valves and on the service water suction supply valve to allow control of the AFW pump flow and to allow transfer of the pump suction supply to the SW system, as required.

SBPB - AFW - RAI - 6

The design flow requirement for the new MDAFW pump is 285 gpm at 3050 ft to meet the design basis for AFW.

Request

Provide the pump curves to show that the new MDAFW pump can meet this requirement.

NextEra Response to SBPB - AFW - RAI - 6

Pump curves for the new MDAFW pumps are provided in Enclosure 3.

SBPB - AFW - RAI - 7

In the amendment, the license identifies one of the key safety analysis inputs for the loss of normal feedwater (LONF) was an AFW pump start delay time on a low-low SG water level of 30 seconds, and the same input parameter for a loss of all alternating current (LOAC) to station auxiliaries of 60 seconds. Both inputs initiate on the same signal, i.e. low-low SG level, and both accident analysis assume that one MDAFW or one TDAFWP is available. The same information is present within the technical evaluation under Section 2.8.5.2.2, and for Section 2.8.5.2.3.

Request

Explain the differences in time when AFW is initiated for the two events which correspond to same event, a LONF.

NextEra Response to SBPB - AFW - RAI - 7

Two different cases are run for loss of normal feedwater (LONF): LONF with offsite power available and LONF with loss of offsite power (LOOP).

- Loss of all alternating current (LOAC) to station auxiliaries assumes a 60-second time delay after a LOOP for AFW start.
- LONF without LOOP assumes a 30-second time delay after the low-low SG setpoint is reached for AFW start.
- LONF with LOOP assumes a 60-second time delay after the low-low SG setpoint is reached for AFW start.

The difference in the assumed delay times is the time for the safety buses to energize and to power the MDAFW pumps (worst case) for the LOOP cases.

The LONF with offsite power available is the limiting case for pressurizer level due to the additional heat input from the reactor coolant pumps running.

SBPB - AFW - RAI - 8

In the amendment, on page 2.5.4.5-7, the licensee states, "The limiting AFW transient is a LONF without a concurrent LOAC since the reactor is not tripped, continuing to add 100% power to the primary loop, until a low-low SG level reactor trip occurs." On page 2.5.4.5-19, the licensee states, "The current AFW analysis limiting event is a dual unit loss of all AC. For the revised EPU analysis the limiting event is a single unit loss of normal feedwater (LONF)."

Request

Clarify what is the current AFW limiting transient, and if there is a change with the installation of the new MDAFW pumps in the current configuration and when the EPU is implemented.

<u>NextEra Response to SBPB - AFW - RAI - 8</u>

The current AFW limiting transient is the single-unit LONF with or without installation of the new MDAFW pumps. The single-unit LONF remains the limiting transient for the EPU. The current LOAC analysis appears to be more limiting than LONF only because it was analyzed at a bounding uprated core power of 1650 MWt, rather than the 1540 MWt core power utilized in the current LONF analysis.

<u>SBPB - AFW - RAI - 9</u>

The safety-related supply for the AFW pumps comes from SW. The licensee does not desire to put SW in the SGs during testing. However, the licensee is required to test 100 percent of flow path of this newly installed SW line to verify flow. Granted, the licensee can test segments of the flow path individually, but collectively, the testing must show flow could transverse to entire flow path through the SW inlet motor-operated valves (MOVs) to the suction of the pumps. Since the SW return flow path is upstream of the SW supply to the AFW pumps, then the flow path from the return tap through the SW supply MOV into the AFW header is not tested.

<u>Request</u>

Describe how testing will verify that SW can traverse the entire flow path to the AFW pumps' suction.

<u>NextEra Response to SBPB - AFW - RAI - 9</u>

Testing to verify the service water (SW) can traverse the entire path to the MDAFW pump suction will include the following:

- Flow testing of each flow path from the SW header to a blowdown connection directly upstream of each of the SW suction supply valve confirms a flow path from the header to the valve inlet.
- Stroke testing of the supply valve with the SW header isolated demonstrates that the valve opens properly.
- The flow path from the SW suction supply valve to the MDAFW pump suction pipe is tested by reverse flow from the condensate storage tank through the SW suction supply valve into the blowdown connection directly upstream of the SW suction supply valve.

The AFW modifications replace the operator on the SW suction supply valves for the TDAFW pumps but do not modify the flow path from the SW header to the TDAFW pump suction. As such, existing testing of these flow paths is not impacted by the AFW modifications.

<u>AFW - RAI - 10</u>

In regards to the currently installed MDAFW pumps, the licensee states, "If running, they will be stripped from the bus upon an AFW initiation signal or diesel safeguards sequence signal for the associated unit." However, these pumps are shared by the two units. One unit can be in startup using these SSG pumps, and the other unit can experience an AFW initiation signal.

Request

Verify that both SSGs trip if either unit experiences an AFW initiation signal or diesel safeguards sequence signal.

NextEra Response to AFW - RAI - 10

Both SSGs will trip if either unit receives a signal to automatically start AFW or if a safeguards signal is received on either unit. The safeguards signal is the same signal that initiates the EDG start and sequencing.

SBPB - AFW - RAI - 11

The AFW pump start logic shows an input from the main FW pumps, "Either or both main feedwater pump control switches in neutral position." There was a concern noted in the industry, NRC Inspection Report 2008-003 at Watts Barr and August 26, 2009, letter to Sequoyah, that licensees were not enabling a required AFW start signal during plant startup/shutdown by placing the MFW pumps' control switches/breakers in a position that would not enable an AFW pump start upon a low SG level.

Request

a) *Describe the switch positions, especially the neutral position, i.e. is the switch spring loaded to go to the neutral position after the pump is turned on or off?*

b) *What is the position of the MFW pumps' control switches during startup/shutdown while feeding the SG with the SSG pumps?*

c) *Is there at any time the MFW pumps switch is not in a position that would enable an automatic AFW pump start while the unit is in a mode requiring AFW?*

NextEra Response to SBPB - AFW - RAI - 11 a, b and c

The design has been modified to eliminate any input from the main feedwater pumps, so the identified concern will not be applicable.

The in-process versions of the MDAFW pump logic drawings discussed in the September 3, 2009, meeting showed an input from the main feedwater pump control switches. Following that meeting, NextEra reviewed the need for this input and determined that it is not required. As a result, the design has been modified to eliminate an input from the main feedwater pumps.

Since this logic input no longer exists, detailed response to Questions 11a, b and c are not required.

SBPB - AFW - RAI - 12

In technical evaluation under Section 2.5.4.5, Auxiliary Feedwater, the licensee states that the two AFW pump systems, i.e., a TDAFW pump and a MDAFW pump, in each unit has some shared discharge piping with instrumentation and controls necessary for operation of the pump system. The AFW system is designed so that a single-active failure will not disable more than one pump system in each unit.

Request

Describe the share active components and whether any of these components could result in a single-active failure causing the loss of both trains of AFW.

NextEra Response to SBPB - AFW - RAI - 12

The response to Acceptance Question 17 in Reference (3) provided a failure modes and effects analysis (FMEA) for the new AFW system. Although there is some shared piping, there are no shared active components and no single active failure will cause loss of both AFW pump systems.

SBPB - AFW - RAI - 13

In technical evaluation under Section 2.5.4.5, Auxiliary Feedwater, the licensee states that there is currently one suction header routed from the CSTs to the 8' elevation of the control building connected to each of the currently installed MDAFW and TDAFW pumps. The AFW modification will retain this header as a dedicated source for the TDAFW pumps and install a new suction header from the CSTs to both new 350 Hp MDAFW pumps. However, the modification is unclear whether the new suction header will tie into the existing suction piping from the CSTs, or tie directly into the CSTs.

Request

Describe the tie-in to the CST for the new MDAFW pumps.

NextEra Response to SBPB - AFW - RAI - 13

Two new nozzles are being added to each condensate storage tank (CST); one 8" nozzle for the new MDAFW supply and one 4" nozzle for the new MDAFW recirculation line. This represents a change in the configuration described in Reference (2), Attachment 5, Section 2.5.1.2, which states, "A new line is being connected into each CST discharge line, and these lines will be connected together to create a single suction header for the new motor-driven auxiliary feedwater pumps." This description should be corrected to say, "A new line is being connected into a new nozzle on each CST, and these lines will be connected together to create a single suction header for the new motor-driven auxiliary feedwater pumps."

SBPB - AFW - RAI - 14

In technical evaluation under Section 2.5.4.5, Auxiliary Feedwater, the licensee states that the minimum available net positive suction head (NPSH) to the AFW pumps occurs when the CSTs are at their lowest level. The licensee confirmed that their calculation show adequate NPSH will be available to the AFW pumps when the water level is well below the centerline of the CST nozzle elevation. However, there are indications that the licensee is changing the design to add a new penetration to the CSTs for the new MDAFW pumps. The amendment does not provide details on a new penetration and if the new penetration affects any limitations to the AFW pumps.

Request

Verify that the two CST penetrations for AFW have the same centerline elevation, or justify the new penetrations are adequate to protect the AFW pumps. In addition, describe the height of the water in the CST relative to the centerline of the CST nozzle that corresponds to this setting in order to confirm adequate NPSH will be maintained to the AFW pumps.

NextEra Response to SBPB - AFW - RAI - 14

The new MDAFW suction nozzles on the two CSTs have the same centerline elevation as the existing AFW suction nozzles on each CST. Calculations demonstrate that water level can be well below that corresponding to the centerline of the CST suction nozzles (28.8 ft plant elevation) to meet the MDAFW pumps required net positive suction head (NPSH). The lowest possible water level in the system where the available NPSH is met for the TDAFW pumps and MDAFW pumps is 19.8 ft plant elevation, and 5.2 ft plant elevation, respectively.

SBPB - AFW - RAI - 15

In the Final Safety Analysis Report Section 10.2.3, under the system evaluation for AFW for a station black out (SBO) event, the licensee states "The steam supply and auxiliary feedwater discharge valves are powered from diverse sources of vital 125V DC." The proposed modification will change the direct current (DC) power supply for the valves to repower all the valves from the same DC bus. The current configuration gives flexibility in the event of a loss of one DC bus in being able to feed at least one SG with the TDAFW pump during SBO or a fire.

Request

Provide the basis for the original design to supply the TDAFW pump with diverse DC power supplies, and a justification that the proposed modifications to the design for the TDAFW pump system will continue to meet the design requirements and requirements of 10 CFR 50.48 and 10 CFR 50.63.

NextEra Response to SBPB - AFW - RAI - 15

FSAR Section 8.7.2 states:

"The safety-related 125 V system consists of four main distribution buses: D-01, D-02, D-03, and D-04. The D-01 (train A) and D-02 (train B) main DC distribution buses supply power for control, emergency lighting, and the red and blue 120 V AC Vital Instrument bus (Y) inverters. The D-03 (train A) and D-04 (train B) main DC distribution buses supply power for control and the white and yellow 120 V AC Vital Instrument (Y) buses."

The feedwater flow from the TDAFW pump to the SGs is controlled via discharge valves AF-4000 and AF-4001; and the steam supply to the turbines is by steam admission valves MS-2019 and MS-2020. Valves AF-4001 and MS-2019 are powered from Train A DC Bus D-01 and valves AF-4000 and MS-2020 are powered from Train B Bus D-02.

To better align the steam admission and discharge valves with the power supply for the valves and controls associated with the TDAFW pumps, the AFW modification shifts power supplies for the valves as follows:

Valve	Pump 1P-29	Pump 2P-29
AF-4000	D-03	D-02
AF-4001	D-01	D-04
MS-2019	D-01	D-04
MS-2020	D-03	D-02

This approach maintains the diversity of power supplies consistent with FSAR Section 10.3.2 and continues to meet commitments associated with 10 CFR 50.48 and 10 CFR 50.63.

SBPB - AFW - RAI - 16

AFW to the faulted SG will increase the secondary mass available for release to containment; therefore, it is essential that AFW is isolated to the faulted SG. In the amendment on page 2.5.4.5-24, the licensee states that each pump system (TDAFW pump and MDAFW pump), will have two ways using opposite train's power to stop AFW flow for events that require flow be terminated. The licensee is repowering valves and controllers to be train specific, e.g. the Unit 1 TDAFW pump and valves will become solely powered by the "A" DC bus, and the new MDAFW pump and valves will be supported from the "B" DC bus.

Request

Explain whether the function to isolate AFW flow in two ways using the opposite train's power will still be provided with the proposed AFW modifications.

NextEra Response to SBPB - AFW - RAI - 16

The function to isolate flow to an affected SG for events that require AFW flow to be terminated in two diverse ways is accomplished as follows:

For the MDAFW pumping system, flow to the affected SG can be isolated by closing the flow control valve associated with the affected SG via 120 V AC powered flow controller in conjunction with the backup pneumatic system, or if the flow control valve fails to close by tripping the MDAFW pump via a diverse 125 V DC pump control power.

For the TDAFW pumping system, flow to the affected SG can be isolated by closing the discharge valve associated with the affected SG via 125 V DC power supply for the valve or if the discharge valve fails to close by tripping the TDAFW pump via a diverse 125 V DC supplies to the TDAFW trip throttle valve.

The sentence at the end of the first paragraph of the section entitled, “Auxiliary Feedwater System Electrical” on Page 2.5.4.5-24 of Reference (2) which states, “Each pump system will have two ways using opposite trained power to stop flow for events that require AFW to be terminated” requires correction. The correction revises the sentence as follows, “Each pump system will have two diverse ways to stop flow for events that require AFW flow to be terminated.”

References

(1) NRC letter to NextEra Energy Point Beach, LLC, dated October 22, 2009, Point Beach Nuclear Plant, Units 1 and 2 - Request for Additional Information from Balance of Plant Branch RE: Auxiliary Feedwater (TAC Nos. ME1081 and ME1082) (ML092930834)

(2) FPL Energy Point Beach, LLC letter to NRC, dated April 7, 2009, License Amendment Request 261, Extended Power Uprate (ML091250564)

(3) NextEra Energy Point Beach, LLC, dated June 17, 2009, License Amendment Request 261 Supplement 1, Extended Power Uprate (ML091690090)

ENCLOSURE 2

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

LICENSE AMENDMENT REQUEST 261
EXTENDED POWER UPRATE
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

FIGURES TO SUPPORT RESPONSE TO SBPB - AFW - RAI - 4

2 pages follow

Figure 1
Low Suction Pressure
Suction Switchover and Pump Logic

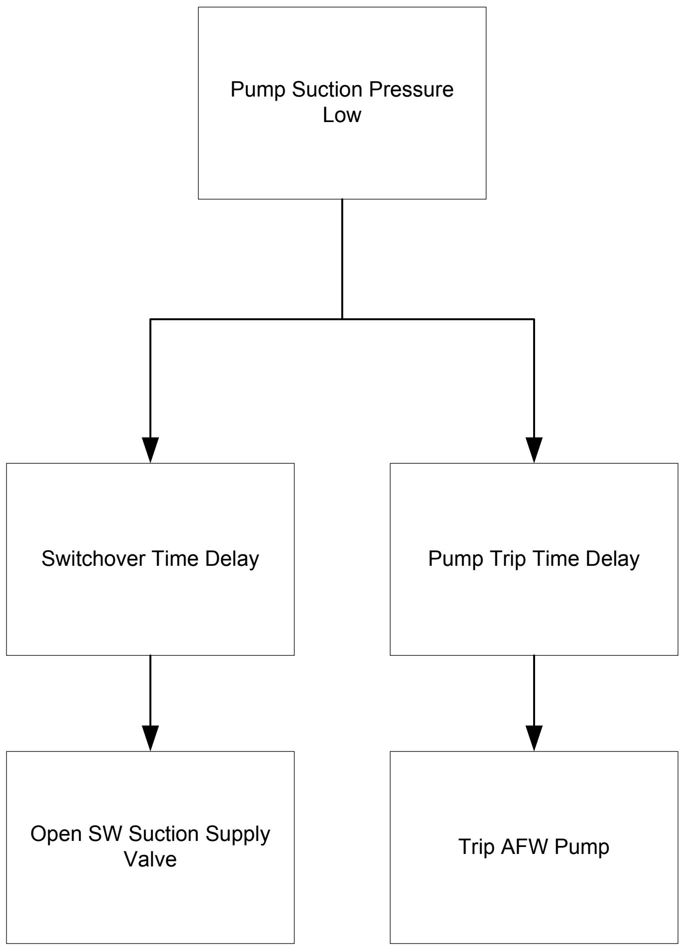
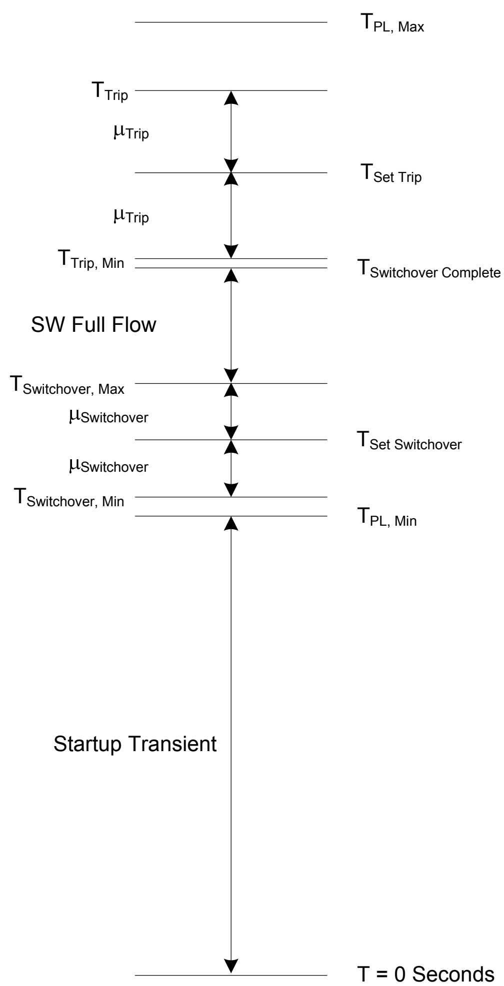


Figure 2
Low Suction Pressure
Suction Switchover and Pump Time Delay



ENCLOSURE 3

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

LICENSE AMENDMENT REQUEST 261
EXTENDED POWER UPRATE
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

PUMP CURVES FOR THE NEW MOTOR-DRIVEN AUXILIARY FEEDWATER PUMPS

2 pages follow

FLOWSERVE
Los Angeles, California

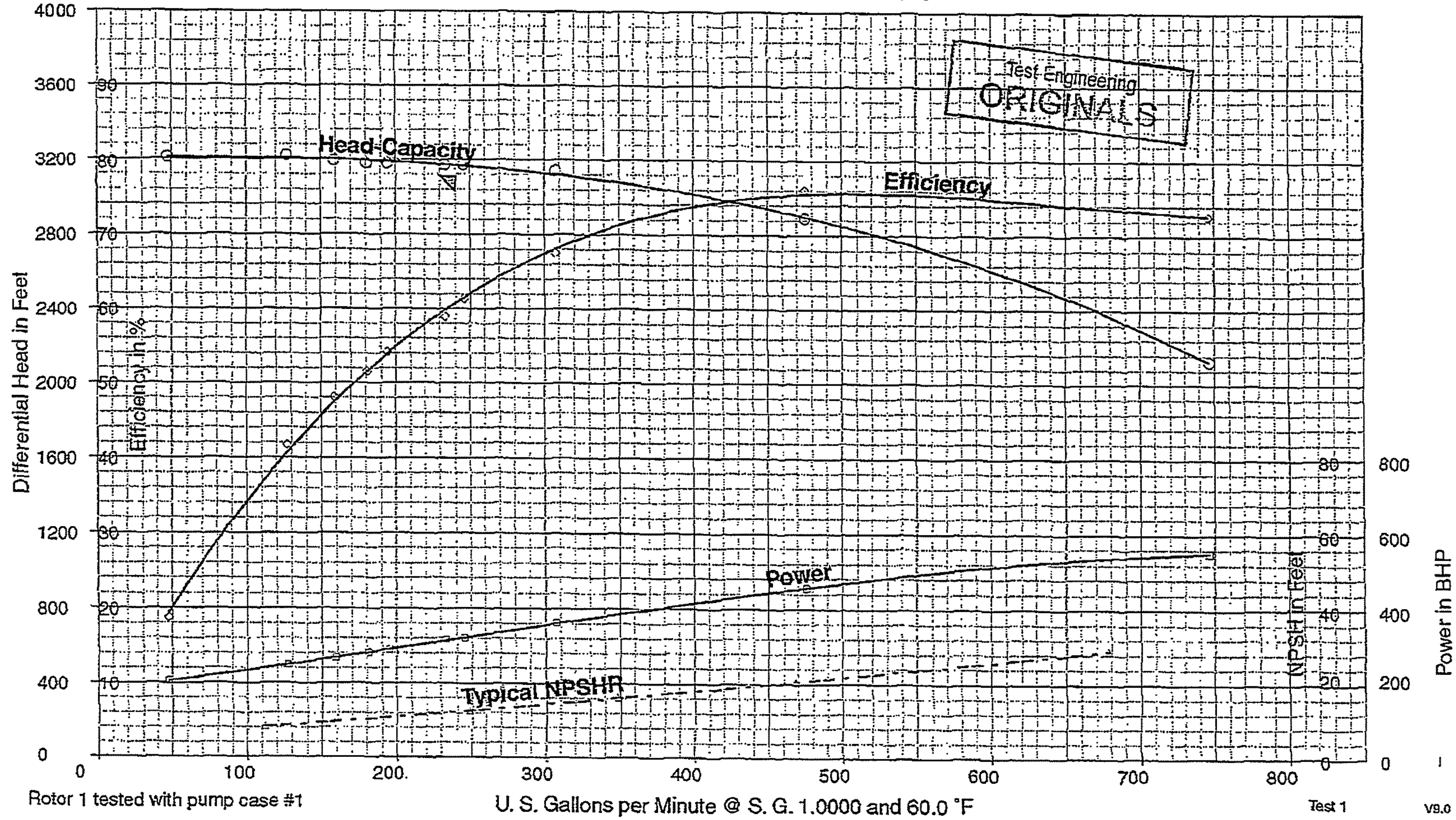
Test Engr.	Approved	Witness
[signature]	A. Ricardo	

Doc./Curve No. 280- RLCA02997-01
Rev. 1 - Original performance data is now under RLCA02993
Rev. 2. - Impeller pattern was R-3165 / RA-3086

Contractor ______
Customer NMC / Point Beach Nuclear Plant
Item No. ______
P. O. No. 8678
Pump Serial Number 05BLCA0299701001
Tested by A. Wong

Size 3x4x9 Type DVMX Stages 9 R.P.M. 3560
Date 9/27/2007 Impeller Eye Area (sq. in.) ______

	Ist Stage	Series Stage
Impeller Pattern	*RB-3165	*RB-3086
Maximum Diameter (in.)	9.375	9.375
Rated Diameter (in.)	9.365/9.125	9.365/9.125
Minimum Diameter (in.)		



Rotor 1 tested with pump case #1

Test 1

V9.0

FLOWSERVE
Los Angeles, California

Test Engr	Approved	Witness
[signature]	A Ricardo	

Contractor ______

Customer NMC / Point Beach Nuclear Plant

Item No. ______

P. O. No. 8678

Pump Serial Number 05RLCA0299701002

Tested by A. Wong

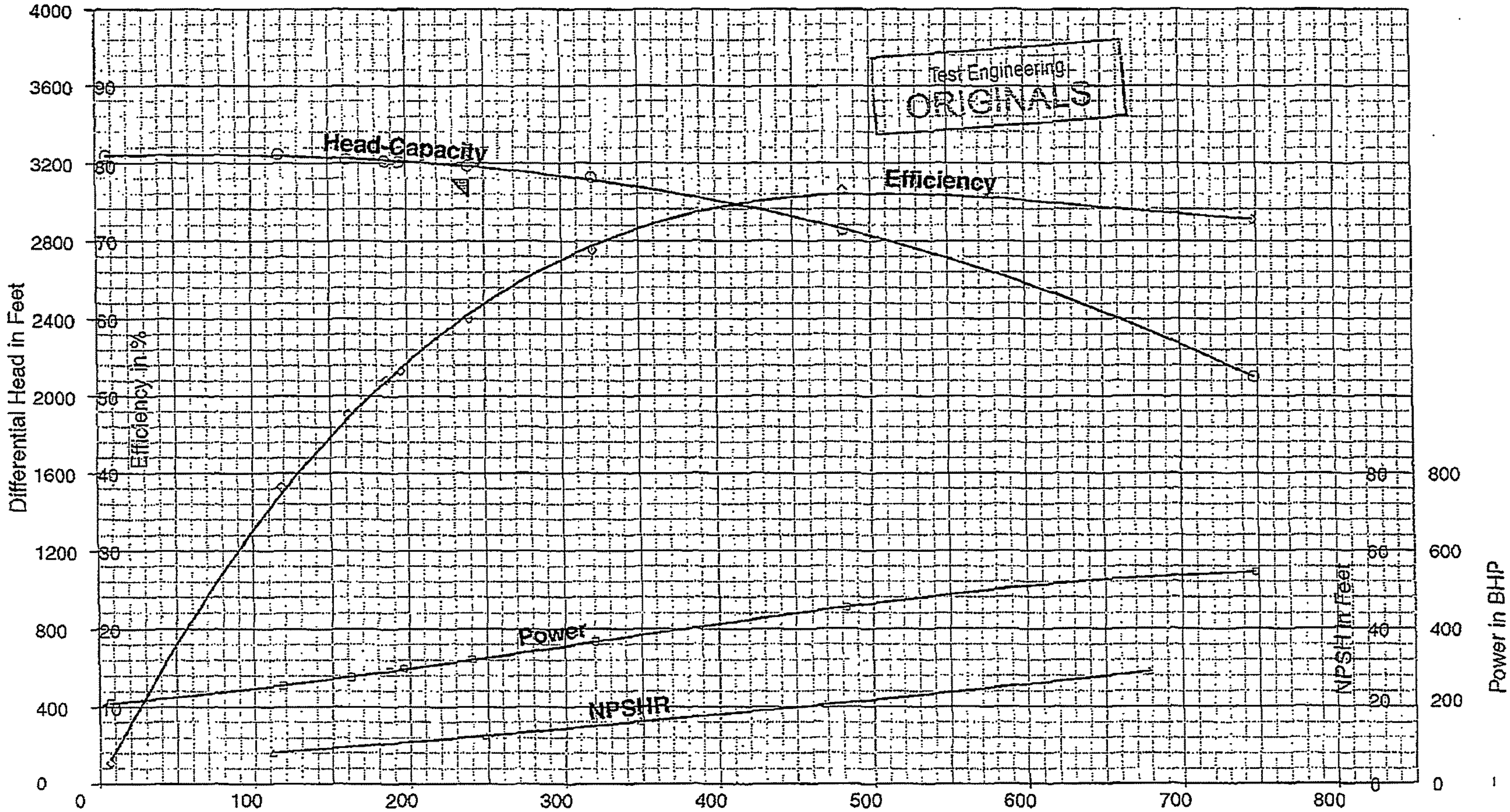
Doc./Curve No. 280- RLCA02997-02

Rev. 1. - Impeller pattern was R-3165 / RA-3086

Size 3x4x9 Type DVMX Stages 9 R.P.M. 3560

Date 9/25/2007 Impeller Eye Area (sq. in.) ______

	Ist Stage	Series Stage
Impeller Pattern	*RB-3165	*RB-3086
Maximum Diameter (in.)	9.375	9.375
Rated Diameter (in.)	9.365/9.125	9.365/9.125
Minimum Diameter (in.)		



Rotor 2 tested with pump case #2

U. S. Gallons per Minute @ S. G. 1.0000 and 60.0 °F

Test 2

V6.0