September 28, 2010

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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 electronic mail to NextEra Energy Point Beach, LLC, dated February 1, 2010, Point Beach Nuclear Plant, Units 1 and 2 – Request For Additional Information From Electrical Engineering Branch Re: Auxiliary Feedwater (ML102600384)

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.

Via Reference (2), the NRC staff determined that additional information is required to enable the staff's continued review of the request. Enclosure 1 provides the NextEra response to the NRC staff's request.

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 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 28, 2010.

Very truly yours,

NextEra Energy Point Beach, LLC

FOR
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 was required (Reference 1) to enable the Electrical Engineering Branch continue review of the auxiliary feedwater (AFW) portion of License Amendment Request (LAR) 261, Extended Power Uprate (EPU) (Reference 2). The following information is provided by NextEra Energy Point Beach, LLC (NextEra) in response to the NRC staff's request for additional information (RAI).

EEEB-1 Loads Operated by Contactors

BACKGROUND: Manufacturers provide a minimum drop out and pick up voltage for their products. These are guaranteed values for the life of the product for specified conditions. Typical value for drop out voltage is 75%-65% of rated control voltage and the pickup is 85%-110% of rated voltage. The licensee verbally indicated that approximately 55% of nominal voltage was considered for contactor drop out.

A. *Please provide justification for using voltages outside the manufacturer's recommended voltage range for safety-related contactor drop out and pickup.*

NextEra Response

The safety-related motor control centers (MCCs) at Point Beach Nuclear Plant (PBNP) utilize Cutler Hammer A200 starter/contactors. The published voltage rating of the Cutler Hammer A200 starter/contactors is a pickup voltage of 85% of rated voltage and a dropout voltage of 60% of rated voltage. During procurement of the MCC buckets from Cutler Hammer for A200 starter/contactors, Cutler Hammer provided and demonstrated the starter/contactors capability of a pickup voltage rating of 80% of rated voltage and a dropout voltage rating of 60%. The acceptance of the pickup and dropout times was validated under a Cutler Hammer Nuclear Factory Test Procedure. In addition, NextEra validated the testing by an independent testing facility when the starter/contactors were procured. Testing was performed on greater than 250 A200 starter/contactors and the test results showed that the pickup voltage rating of 80% of rated voltage and a dropout voltage rating of 60% of rated voltage met the acceptance criteria.

The dropout voltage rating of 60% of rated voltage utilized by NextEra is equivalent to the manufacturer's published rating for A200 starter/contactors. However, the pickup voltage rating of 80% of rated voltage is utilized versus the published rating of 85% for A200 starter/contactors. NextEra determined this is acceptable based on both the original equipment manufacturer and independent testing.

B. *If the licensee is using values other than manufacturer provided data (e.g. bench tested values), then please provide assurance that the assumed pick up and drop out values will be consistent for all conditions for the life of the product and there are plant controlled procedures for replacement of each device that has been analyzed at a value different than manufacturer provided data.*

As applicable, please provide sufficient information to offer reasonable assurance that the conditions specified above are satisfied.

NextEra Response

As stated in the response to EEEB-1A, a pickup voltage rating of 80% of rated voltage and a dropout voltage rating of 60% of rated voltage are acceptable based on the original equipment manufacturer (Cutler Hammer) testing and independent testing. However, NextEra also implemented a preventive maintenance program to periodically test each MCC starter/contactor's pickup and dropout voltage. The preventative maintenance testing is performed on a 6-year frequency and ensures the pickup and dropout voltages utilized are acceptable for the safety-related MCC starter/contactors. A device (starter/contactors) that does not meet the acceptance criteria is documented in the station's corrective action program. Preventive maintenance testing provides reasonable assurance that the MCC starter/contactors will be capable of performing design basis functions at a pickup voltage rating of 80% of rated voltage and a dropout voltage rating of 60% of rated voltage. Based on preventive maintenance testing and original testing, MCC starter/contactors are expected to operate within the ratings for their expected life.

C. *Depending on the number of voltage excursions below and above the nominal voltage, the motor loads may stall and restart. The low voltage and overvoltage conditions result in higher current flow.*

Please verify that the evaluation for heating effect on the thermal protective devices included the effects of heating during the voltage transient and residual heating prior to the excursion.

NextEra Response

Thermal protective devices for motors, except motor-operated valves (MOVs), were evaluated to ensure the protective device would be capable of starting the motor two consecutive times with one start occurring immediately after the previous start. The evaluation used locked rotor current at nameplate voltage data for the full duration of the motor acceleration time. For evaluation purposes, the motor acceleration times were doubled and compared to the thermal protective device characteristic curve using the locked rotor current at nameplate voltage data for the entire motor acceleration time. This approach is conservative because the motors do not remain at locked rotor conditions for the full duration of the motor start. Additionally, motor starting will not occur immediately after the previous start. The MCC motors will start no more than two times. This means that there will be an initial motor start and a potential second start if the containment spray pump motor starts concurrently with another large switchgear motor (i.e., during a small break loss of coolant accident (LBLOCA) event). The evaluation of the protective devices for the motor loads determined that the protective devices will not operate inadvertently during low and over voltage conditions. The conservative approach used in the evaluation bounds uncertainties that might result from the effects of heating due to the voltage transient or residual heat.

The evaluation of thermal protective devices for MOV's conservatively assumed that the motor was at locked rotor current at nameplate voltage during each stall period and at running current during MOV stroke periods, since there are two different values of heating experienced by the MOV thermal overload (TOL) relays. Note that the TOL relay bounds the response of the molded case circuit breaker for each MOV.

The total heating effect of both stall and running operation was summed to determine the TOL relay heating for the entire valve stroke. Therefore, the TOL total heating effect included both stalls during the voltage transients and the heat from the normal stroke of the valve. This total TOL relay heating effect was compared to the heating required to trip the TOL using the TOL relay time characteristic curves. This method was conservative and bounds any uncertainties. The results of the evaluation showed that MOV loads would not actuate their TOL relay based on the total heating effect including stall conditions.

The approach used is conservative and bounds the effects of heating during the voltage transient and residual heating prior to the excursion based on:

1. The typical load step is composed of an initial undershoot (dip) in voltage, recovery and an overshoot in voltage. During the initial undervoltage condition, the MOV is a constant kVA load. As the voltage decreases, the current increases. During running and overvoltage conditions, the constant kVA MOV voltage increases and current decreases. The net effect on the TOL heating is that the voltage and current increases and decreases during the load steps cancel each other out resulting in no net TOL heating effect. In addition, the changes in running current have a negligible impact to the total heating effect because the running current is below the 100% trip setpoint of the TOL relay.

2. During stall conditions, an induction motor (MOV) responds as a constant impedance load. As the voltage decreases, the current would also decrease. Therefore, the evaluation performed utilized the locked rotor current at nameplate voltage which would result in a conservative value because the motor will not stall until the voltage drops below 100%. The locked rotor current was not increased for overvoltage conditions because the MOV would fully accelerate in less than 0.1 cycles (as stated in EEEB-2E) which would be before the overvoltage condition existed.

Accordingly, the evaluation of the heating effect on the thermal protective devices included the effects of heating during the voltage transient and residual heating prior to the excursion based on the conservative approach that was utilized. The result of the evaluation showed that the equipment was capable of performing the required safety-related function and would not prematurely trip its protective device.

D. *The low voltage results in dropping out contactors and loads that were operating prior to a large motor start. The licensee has indicated that loads are capable of restarting and operating to meet design basis requirements.*

Please verify that the process fluid systems were evaluated for potential effects such as voiding and water hammer.

NextEra Response

An evaluation was performed on the required fluid systems to analyze the effects of intermittent opening of valves (or motion of other equipment) that are potentially affected by intermittent low voltage of the emergency diesel generator (EDGs). The results of the evaluation showed that there are no adverse fluid effects on valves such as voiding and water hammer due to intermittent motion of the valves.

E. *According to the licensee response dated August 9, 2010, the licensee states 'the worst-case total loading of the EDG occurs with one EDG supplying both units during a design basis event with a LOOP/LOCA on one unit coincident with a LOOP on the other unit.' The licensee evaluated the loads dropped out during EDG voltage excursions and concluded that all loads will start as long as the ESFAS was present. This is applicable to the unit with the LOCA condition.*

Please provide details for impact on the Unit associated with the LOOP only event.

NextEra Response

As stated in RAI 1.c of Reference (3), the worst-case loading sequence on the EDGs occurs with one EDG supplying both units during a design basis event with a loss of off-site power (LOOP)/loss of coolant accident (LOCA) on one unit coincident with a LOOP on the other unit. The MCC loads on the LOOP-only unit will experience the same voltage excursions as the LOOP/LOCA unit as a result of being supplied from the same EDG when in the design basis accident configuration of a single EDG supplying both units. The MCC loads on the LOOP unit fall under the following three categories:

1. MCC loads that contain only a breaker and do not contain starter/contactors which results in the MCC load staying connected to the bus.

2. MCC loads that are sequenced by a process-driven load which requires the MCC loads to start (e.g. Heating Ventilation and Cooling.)

3. MCC loads that are sequenced by an engineered safety feature actuation system (ESFAS) signal on the accident unit. The PBNP MCCs contain common safety-related loads which operate as a result of either unit receiving an ESFAS signal.

The MCC loads on the LOOP unit will start as long as the ESFAS signal is present on the LOOP/LOCA accident unit, or the process-driven signal is present or the MCC load stays connected to the bus because it has no starter/contactors.

The MCC loads on the LOOP-only unit were evaluated utilizing the same methodology as MCC loads on the LOOP/LOCA unit as described in RAI 1.b of Reference (3). The results of the evaluation demonstrated that the MCC loads on the LOOP-only unit would be capable of performing their safety-related function. The most limiting components for both the LOOP/LOCA Unit and LOOP-only unit are addressed in EEEB 2.

<u>EEEB 2</u> ***<u>Motor Operated Valves</u>***

The licensee evaluated the stroke time of MOVs as discussed in the example for SI-860 Valve:

"An example is provided for the SI-860 valves (CS pump discharge valves) based on the logic above. The minimum voltage requirements for these valves to operate is 365 V and the required stroke time is less than or equal to 16.5 seconds. The valves design stroke time is 11.73 seconds. The CS valves actuate on a high-high containment pressure signal, and therefore, are a random load on the system. The voltage dropped below 365 V a total of 5 times during the load sequence for a maximum total of 3.6 seconds, which was conservatively rounded to 4.0 seconds. The valve stroke time of 11.73 seconds was added to stall time of 4.0 seconds to determine a total stroke time of 15.73 seconds. This provides a 0.77 second margin to the required stroke time of 16.5 seconds."

It should be noted that at rated voltage, the motor delivers rated torque and speed. With the decrease in applied voltage, the torque produced varies with speed, both the torque and speed decreases resulting in an increase in slip. This lower speed due to degraded voltage will result in increased heating as well as reduced efficiency. The immediate effect of the degraded voltage is the reduction of the net torque produced which in turn means that the motor may not produce the desired thrust to satisfy the safety-related operation of the actuator.

For the SI-860 valves in the example above, the evaluated margin of 0.77 second is relatively small. There are also several factors that can impact the MOV stroke time.

Please provide a response to the following:

A. Verify the minimum voltage required for the 11.73 second stroke time.

<u>NextEra Response</u>

The minimum voltage required for the 11.73 second stroke time is 365 V. NextEra determined, based on the EDG transient analysis results, that the minimum voltage of 365 V be used as an input to the degraded voltage calculation. The 11.73 second stroke time is an output of the MOV operating parameters calculation.

B. Verify that this stroke time is consistently repeatable in the plant configuration and is for worst case loading on the valve.

<u>NextEra Response</u>

A review of five years of quarterly in-service test data and diagnostic traces confirm that stroke timing for the safety injection (SI) SI-860 valves is consistent and repeatable within a 0.75 second band with no abnormal trends.

The worst case loadings on SI-860 valves such as differential pressure, flow rate, temperature, efficiency, and friction are considered in the required stem thrust calculation. This calculation determines the maximum available stem thrust and torque for safety-related gate valves and safety-related globe valves during design basis undervoltage conditions. This calculation is used to determine the maximum pullout thrust and torque values used in the MOV operating parameters calculation for determining the proper valve setup to accommodate the worst case loading of the valve.

C. Verify that effects that can reduce the thrust delivered by the motor operator under high differential pressure and flow conditions in relation to the thrust delivered under no-load conditions was considered.

NextEra Response

The effects that can reduce the available thrust are the voltage drop and the physical characteristics of the component such as packing friction. These items are accounted for in the undervoltage thrust torque calculation and the required thrust calculation. The worst case conditions for differential pressure and flow have been evaluated in the system requirements calculations which provide input into the required thrust calculation. These conditions have been evaluated with acceptable results and bound the no-load conditions for the valve.

D. Verify that the reduction in torque/speed was evaluated as the EDG output voltage is reduced during the transient caused by large motor starts.

NextEra Response

NextEra determined, based on the EDG transient analysis results, that the minimum voltage during transients to be used as an input to the degraded voltage calculation is 365 V. The output from the degraded voltage calculation is the degraded voltage factor, which is used as an input to the undervoltage thrust / torque calculation to determine the maximum available stem thrust and torque during design basis undervoltage conditions.

The operating parameters calculation, using the inputs discussed above, show that the MOVs can perform their safety-related function at the reduced voltage and torque/speed.

E. Verify that the deceleration and acceleration time for the motor operator was considered during every event that the terminal voltage dropped below 365V.

NextEra Response

The SI-860 MOV operators are Limitorque Model SMB OO with ½ hp 480 V motors. The diagnostic traces for Unit 1 SI-860A confirm that the motors will reach rated speed within 6 cycles or approximately 0.1 seconds. The EDG transient calculations assume that the motor is stalled as the terminal voltage drops below 365 V. However, the valve will continue to coast for a short period during deceleration. As the voltage returns, there will be a short delay as the motor returns to operating speed. This coasting and returning to operating speed of the valve was not considered in the MOV stroke time analysis as a result of the deceleration and acceleration canceling each other out.

F. *The CS valves are a random load on the system. Verify that the stroke time is not extended if the Hi-Hi containment pressure signal is coincident with the worst case motor start on the EDG, resulting in delaying the MOV actuation until the voltage recovers to an adequate value.*

NextEra Response

There were several approaches used to evaluate the capability of the containment spray (CS) pump valves to start stroking in any load block. If the CS pump valves stroke coincident with a large motor start, the EDG voltage would decrease due to the step load addition and the contactor could drop out or the MOV may stall. The initial approach as described in response to RAI 1.b of Reference (3) resulted in 0.77 seconds of evaluated margin. The approach was to use the worst case delay times where the voltage dropped below the MOV rated voltages in the large motor load blocks that could interact with the SI-860 valves. This approach added the delay times for the load blocks. This is conservative because the nominal MOV stroke time would not allow interaction with the load blocks during MOV stroking. NextEra conducted a more focused approach to determine actual SI-860 delay times as outlined below.

To bound the impact of the condition where the CS pump starts at a random time, two cases were evaluated. The first case used the LBLOCA, where the high-high containment pressure signal occurs quickly in the accident sequence and the signal is in place when the EDG output breaker is closed. This is the load sequence for which the accident analysis timing requirement is specified as critical. The second case considered conditions where the high-high containment pressure signal is received later in the load sequence, allowing the CS pump valve stroking to occur coincident with the loading of large motors. This second case was determined to be the worst case relative to MOV stroke time, but has no critical timing requirements during the EDG sequencing interval. LBLOCA with LOOP timing requirements were conservatively applied.

Large Break Loss of Coolant Accident Case (SI-860 starts on EDG breaker closure (t=0))

A LBLOCA design basis event where the high-high containment pressure signal was postulated to occur before the EDG output breaker closure and the EDG starting sequence (EDG breaker closure occurs 14 seconds into the LBLOCA event) was evaluated. The results of the evaluation showed that the SI-860 MOV started at t=0 seconds and experienced only an initial MCC pick-up delay. There were no additional delays postulated because the voltage remains above 365 V throughout the SI-860 MOV stroke. The resulting stroke time for the SI-860 MOV starting at t=0 seconds is 13.03 seconds. The allowable stroke time is 16.50 seconds, resulting in a margin of 3.47 seconds.

SI-860 Variable Starting Time (Worst Case)

The SI-860 MOVs were postulated to start on a high-high containment pressure signal with t>0 for non LBLOCA events. Design basis MOV stroke time was used to document a series of starts where the SI-860 MOVs could interact with different MCC drop-outs and MOV stall periods during the 70 second EDG loading sequence. The short MOV stroke time will not allow the MOVs to interact with the different stall periods during the 70 seconds load sequencing interval. The maximum CS pump MOV stall time was determined, added to the nominal stroke time and this result was found to be less than the required stroke time. This case required a more detailed evaluation, as it focused upon delays in stroke time only over the period the MOV would be stroking in the EDG load sequence interval. This evaluation yielded a MOV stroke time margin of 1.87 seconds, based on an allowable stroke time of 16.5 seconds, which is conservative for a non-LBLOCA event.

The start of the CS pump at a random time was postulated to determine the worst case affect on the SI-860 valves resulting from the starting of large motor loads. The worst case stroke time delay due to the CS pumps starting at any time in the load sequence was found to be acceptable. With the worst-case delay added to the nominal SI-860 stroke time, the calculated stroke time was less than the required SI-860 stroke time. The design basis LBLOCA with LOOP has a margin of 3.47 seconds. Therefore, the SI-860 valves stroke times are not adversely impacted when high-high containment pressure signal is coincident with the worst case motor start on the EDG. The stroke time margin of 0.77 seconds previously provided accounts for the bounding condition.

G. *Verify that the uncertainties associated with the accuracy of the MOV diagnostic equipment, frictional variations due to plant maintenance/lubrication activities, etc. were considered.*

NextEra Response

The uncertainties associated with the influencing factors for the MOVs are addressed in the MOV operating parameters calculation. Minimum required thrust and maximum torque tables address uncertainties in equipment accuracy, rate of loading, torque switch repeatability and lubrication degradation factors. Thrust equipment accuracy and torque equipment tables account for uncertainties in the diagnostic sensors, degraded voltage, actuator efficiency based on pullout value, torque switch repeatability and actuator application factor.

The MOV parameters are formally controlled and adjusted by the guidance in an approved plant procedure. These parameters include: minimum required stem thrust, maximum allowable packing friction, maximum allowable stem thrust, and maximum allowable torque.

H. *If the MOV is controlled by a contactor, verify that the total stall time was based on longer of the two, the pick- up voltage of the contactor or the adequate voltage needed for motor to operate.*

NextEra Response

The MOV stall time evaluation established the MOV stall time below the required minimum voltage (i.e., 365 V for the SI-860 valves) and the MOV starter/contactors drop out time (the time at which voltage drops below dropout voltage until voltage recovers above pickup voltage). The overall worst-case total MOV stroke time evaluation utilized the worst-case delay between the MOV stall time or MOV starter/contactors drop out time, whichever was the longer of the two. Therefore, the total MOV stroke time developed provided the bounding MOV stroke time.

I. *Based on the field setting, the 'absolute' EDG frequency can be at the lower end of the allowable range e.g. 58Hz. Based on the lowest allowable frequency value, coupled with voltage/frequency excursions during motor starts, verify that the valve stroke time is within acceptable limits.*

NextEra Response

NextEra evaluated the MOV stroke time and the results of the evaluation showed that SI-860 MOVs had a stroke time margin of 3.47 seconds for the LBLOCA case based on the allowable stroke time of 16.5 seconds, a design stroke time of 11.73 seconds and a contactor pickup delay of 1.3 seconds. The evaluation conservatively assumed that the motor speed is zero if the corresponding MCC voltage dips below the minimum degraded voltage of 365 V and the motor speed is 1700 rpm when the corresponding MCC voltage is greater than 365 V. This approach inherently assumes that the average EDG frequency is 60 Hz during the valve stroking.

NextEra determined based on the results of the EDG transient analysis that the average EDG frequency is 60 Hz during the MOV stroke interval. The evaluation results also show that the frequency dips on the EDGs are offset by the frequency excursion. Therefore, the motor speed during the event will also be the speed developed if the frequency were 60 Hz and frequency excursions during the EDG load sequence for MOV stroke time is within acceptable limits. The EDG frequency response during the EDG load sequence will have the same EDG frequency response throughout the allowable EDG frequency setpoint range. Refer to EEEB 2D for a discussion on the impact of voltage excursions.

Based on the above, the worst case average EDG frequency for the MOV stroke would be 59.7 Hz, including uncertainty. This corresponds to a worst-case increase in valve stroke time of (60 – 59.7) / 60 x 11.73 = 0.06 seconds. This approach results in a negligible increase in the overall stroke time compared to the LBLOCA margin of 3.47 seconds and would not impact the capability of the MOVs to perform their associated safety-related function.

J. *Explain why the 0.77 second stroke time margin is adequate for MOV SI-860 considering the above, and account for uncertainties.*

NextEra Response

The discussion and results of the SI-860 MOVs stroke times evaluations were provided in References (3) and (4). Based on the evaluation results, NextEra determined that there is a stroke time margin of 0.77 seconds for the SI-860 valves. The following demonstrates the basis for the adequacy of the 0.77 seconds margin.

The LBLOCA evaluation considered the design basis LBLOCA with a LOOP crediting the containment spray functional critical timing requirement of the accident analysis. NextEra determined, based on the results of the EDG transient analysis, that the SI-860 MOVs had a stroke time margin of 3.47 seconds for the LBLOCA case. The 3.47 seconds is based on the allowable stroke time of 16.5 seconds, a design stroke time of 11.73 seconds and contactor pickup delay of 1.3 seconds.

Response to EEEB 2.E states that the acceleration time for the SI-860 valves would be 0.1 seconds to start the motor after initial pickup or after the MOV stalls. Therefore, a maximum time of 0.1 seconds was added for initial pickup of the motor for a LBLOCA, because the minimum voltage will remain above 365 V throughout the SI-860 MOV stroke time after initial pickup of the motor.

The impact of variations in frequency setpoint and frequency excursions is conservatively quantified in the response to EEEB 2.I to be less than 0.06 seconds.

Additionally, the overall containment spray functional time of 70-second includes a 40-second time requirement to fill the containment spray headers after the containment spray pump has accelerated to full speed and prior to initiating spray at the spray nozzles. The header fill time was determined based on the bounding "B" Train header length. The "A" Train containment spray header piping volume is smaller and calculations have assessed the "A" Train fill time and concluded that there is an available margin of 8 seconds in the overall containment spray functional time for "A" Train as compared to "B" Train used in the bounding analysis.

The other cases were analyzed as part of the bounding analysis conducted for the remaining MOVs but there is no critical timing requirement during the EDG sequencing interval for non-LBLOCA events in the accident analysis under LOOP conditions.

Therefore, the impact on stroke time margin is conservatively determined to be less than 0.16 seconds for a LBLOCA. This margin is significantly less than the available margin of 3.47 seconds based on the results of the EDG transient analysis for the SI-860 MOVs and a total of 11.47 seconds for the overall functional timing of the "A" Train. Therefore, the original margin of 0.77 seconds of margin was determined to be acceptable because the evaluation established a bounding stroke time evaluation for all conditions utilizing conservative assumptions. The results of the evaluation show that additional margin is available.

K. *Identify the most limiting component when fed from EDG A and confirm that all safety-related equipment has adequate voltage with sufficient margin to account for uncertainties.*

NextEra Response

The voltage dips below the minimum voltage requirements for the MCC loads during EDG load sequencing because the minimum voltage may drop to approximately 51% of nominal voltage on the "A" Train EDGs. However, NextEra evaluated the safety-related components powered from the "A" Train EDGs. The results of the evaluation showed that the equipment is capable of performing the required safety-related functions. The discussion and results of these evaluations were provided in References (3) and (4).

NextEra evaluated the total MOV stroke times based on the design basis stroke time and MOV stall time compared to the required timing requirements within the accident analysis. The results of the evaluation showed that the most limiting components for MOV stroke times when fed from "A" Train EDGs are the SI-860 A(B), containment spray full flow discharge isolation valves. The SI-860 A(B) valves have an available margin of 3.47 seconds, based on the allowable stroke time of 16.5 seconds and a calculated stroke time with contactor dropout delay of 13.03 seconds. Response to question EEEB-2J provides additional discussion regarding stroke time margin and uncertainties related to these valves.

NextEra evaluated the protective devices during EDG load sequencing. The results of the evaluation showed that the most limiting component for the protective device is the thermal overload relay for MOV SW-2927B (HX-13B, spent fuel pump heat exchanger service water inlet valve). This valve does not exceed the trip current for the TOL relay protective device including uncertainties and there is sufficient margin so the valve operation, including operating and stall conditions, will not trip a protective device.

Therefore, the equipment is capable of performing the required safety-related functions with sufficient margin to account for uncertainties.

EEEB 3

According to the PBNP FSAR, a 550 gallon "day tank" is located near each unit. An additional 550 gallon storage tank is located in the base of each of the Train A units. The licensee has eliminated a 10% additional requirement for EDG fuel oil storage in the day tanks associated with each EDG. The licensee stated that the 10% additional margin is a requirement for fuel oil calculation after the transfer pump has started. The licensee indicated that PBNP intends to maintain 120 minutes worth of fuel for EACH EDG in each day tank.

Please confirm that this information is accurate.

NextEra Response

The statement that the "10% additional margin is a requirement for fuel oil calculation after the transfer pump has started," is not entirely correct. During the teleconference between NextEra and the NRC on September 16, 2010, the intention was to clarify that, while ANS-59.51/ANSI N195-1976, "Fuel Oil Systems for Standby Diesel-Generators" requires that a 10% margin be added to the minimum 1-hour day tank capacity at the point the fuel transfer pump starts, the G-03 and G-04 installation did not apply the 10% to the pump start level setpoint. Instead, the 10% margin had originally been applied to the pump stop setpoint that was based on a minimum two hours of fuel. The PBNP design was not intended to meet ANS-59.51/ANSI N195-1976.

The 10% non-specific design margin included in the original calculation has been replaced by fuel oil heat content uncertainties and an increase in the unusable volume to account for potential vortex formation at the tank outlet. NextEra will continue to ensure that there is a minimum of one hour of fuel at the point where the transfer pumps start a transfer cycle, and a minimum of two hours of fuel at full rated load at the point where the transfer pumps end a transfer cycle.

The statement that the licensee indicated that, "PBNP intends to maintain 120 minutes worth of fuel for each EDG in each day tank," is not correct. When the fuel oil transfer pump automatically stops after filling its respective day tank, there will be a minimum of 120 minutes of fuel oil in the day tank supplying the EDG. The tank level may then be drawn down to the point where there is a minimum of one-hour of fuel remaining in the tank before the transfer pump is again automatically started. The day tank level is typically between the one hour level and two-hour level when the EDGs are in standby. EDGs G-03 and G-04 do not have a skid-mounted tank.

A summary of fuel availability for each EDG is provided below. The required volume includes allowances for variations in fuel consumption rates due to the allowable range of fuel heat content. The usable tank volume includes allowance for instrument uncertainties and potential vortex formation.

TABLE EEEB 3-1

Tank	A Train EDGs (G-01 and G-02) Day Tank and Skid-Mounted Tank (gallons)	B Train EDGs (G-03 and G-04) Day Tank Only (gallons)
Nominal Day Tank Volume	550	550
Usable Day Tank Volume When Transfer Pumps Start (a)	Not Calculated (assume 0)	235.5
Usable Day Tank Volume When Transfer Pumps Stop (b)	424.9	443.6
Usable Skid Mounted Tank Volume (c)	426.4	Not Applicable (assume 0)
Maximum Fuel Consumption Rate at Full Rated Load - gph (d)	218.3	214.7

TABLE EEEB 3-2

Fuel Available	A Train EDGs (G-01 and G-02) Day Tank and Skid Mounted Tank (Hours)	B Train EDGs (G-03 and G-04) Day Tank Only (Hours)
Hours of Fuel Available at Pump Start: (a+c)/d	1.95	1.10
Hours of Fuel Available at Pump Stop: (b+c)/d	3.90	2.07

References

(1) NRC electronic mail to NextEra Energy Point Beach, LLC, dated September 13, 2010, Point Beach Nuclear Plant, Units 1 and 2 – Request For Additional Information From Electrical Engineering Branch Re: Auxiliary Feedwater – Round 2 (TAC NOS. ME1081 and ME1082) (ML102600384)

(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 letter to NRC dated August 9, 2010, License Amendment request 261, Extended Power Uprate (ML102220146)

(4) NextEra Energy Point Beach, LLC letter to NRC dated April 15, 2010, License Amendment Request 261, Supplement 4, Extended Power Uprate (ML101050357)