UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 13, 2011

Mr. Larry Meyer
Site Vice President
NextEra Energy Point Beach, LLC
6610 Nuclear Road
Two Rivers, WI 54241-9516

SUBJECT: POINT BEACH NUCLEAR PLANT (PBNP), UNITS 1 AND 2 – ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT CONCERNING THE PROPOSED EXTENDED POWER UPRATE (TAC NOS. ME1044 AND ME1045)

Dear Mr. Meyer:

Enclosed is a copy of the Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) related to the NextEra Energy Point Beach, LLC (the licensee) application for amendment dated April 7, 2009, as supplemented on May 13 and July 15, 2010 (on environmental issues), for PBNP, Units 1 and 2. The proposed amendment would authorize increasing the maximum thermal power from 1,540 megawatts thermal (MWt) to 1,800 MWt, which is an increase of approximately 17 percent over the current licensed thermal power, and approximately 18 percent from the original licensed thermal power.

The assessment is being forwarded to the Office of the *Federal Register* for publication.

Also enclosed is a summary of the comments received on the draft EA and draft FONSI that was published in the *Federal Register* on December 10, 2010 (75 FR 77010).

Sincerely,

Terry A. Beltz, Senior Project Manager
Plant Licensing Branch III-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-266 and 50-301

Enclosures:
1. Environmental Assessment
2. Summary of Comments on Draft EA and Draft FONSI

cc w/encls: Distribution via Listserv

ENCLOSURE 1

7590-01-P

UNITED STATES NUCLEAR REGULATORY COMMISSION

NEXTERA ENERGY POINT BEACH, LLC

POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-266 AND 50-301

ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

RELATED TO THE PROPOSED LICENSE AMENDMENT

TO INCREASE THE MAXIMUM REACTOR POWER LEVEL

[NRC-2011-xxxx]

The U.S. Nuclear Regulatory Commission (NRC) is considering issuance of an amendment for Renewed Facility Operating License Nos. DPR-24 and DPR-27, issued to NextEra Energy Point Beach, LLC (NextEra, the licensee) for operation of the Point Beach Nuclear Plant (PBNP), Units 1 and 2, located near Two Rivers, Wisconsin. In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Section 51.21, the NRC has prepared an environmental assessment (EA) documenting its finding. The NRC concluded that the proposed actions will have no significant environmental impact.

The NRC published a draft EA and draft finding of no significant impact (FONSI) on the proposed action for public comment in the *Federal Register* on December 10, 2010 (75 FR 77010). Comments were received on the draft EA from: 1) the licensee; 2) members of the public; and 3) the Wisconsin Public Service Commission. Publicly available documents created or received at the NRC, including the public comments and responses, are available electronically at the NRC's Electronic Reading Room at http://www.nrc.gov/reading-rm/adams.html. From this site, the public can access the NRC's Agencywide Documents

Access and Management System (ADAMS), which provides text and image files of NRC's public documents. The document summarizing and addressing the public comments is located at ADAMS accession number ML110950476.

ENVIRONMENTAL ASSESSMENT

Plant Site and Environs:

The PBNP site is located approximately 6 miles (10 kilometers) east-northeast of the town of Mischot on the western shore of Lake Michigan, midway along the western shore, near the northeastern corner of Manitowoc County, Wisconsin. The City of Green Bay is located approximately 25 miles (40 kilometers) northwest of PBNP, and the Kewaunee Nuclear Plant is located approximately 4 miles (6 kilometers) north of PBNP on the shore of Lake Michigan. The PBNP site is comprised of approximately 1,260 acres (510 hectares), with 104 acres (42 hectares) that includes the two nuclear reactors, parking and ancillary facilities. Approximately 1,050 acres (425 hectares) are used for agriculture, and the remaining land is a mixture of woods, wetlands, and open areas. Each of the two units at PBNP use Westinghouse pressurized water reactors.

Identification of the Proposed Action:

By application dated April 7, 2009, the licensee requested an amendment for an extended power uprate (EPU) for PBNP to increase the licensed thermal power level from 1,540 megawatts thermal (MWt) to 1,800 MWt for each unit, which represents an increase of approximately 17 percent above the current licensed thermal power and approximately 18 percent over the original licensed thermal power level. This change in core thermal power level requires the NRC to amend the facility's operating license. The operational goal of the proposed EPU is a corresponding increase in electrical output for each unit from 519 megawatts electric (MWe) to 607 MWe. The proposed action is considered an EPU by NRC because it

exceeds the typical 7 percent power increase that can be accommodated with only minor plant changes. EPUs typically involve extensive modifications to the nuclear steam supply system.

The licensee plans to make extensive physical modifications to the plant's secondary side to implement the proposed EPU over the course of two refueling outages currently scheduled for the spring 2011 and the fall 2011. The actual power uprate, if approved by the NRC, would occur for each unit following the respective refueling outages in 2011.

The Need for the Proposed Action:

The need for the additional power generation is based upon the goals and recommendations of Wisconsin's 2007 Final Report on "Strategic Energy Assessment Energy 2012" for maintaining a robust energy planning reserve margin of 18 percent. In this report, the State of Wisconsin, Public Service Commission, forecasted an annual growth rate of over 2 percent in demand for electricity. The proposed action provides the licensee with the flexibility to increase the potential electrical output of PBNP Units 1 and 2 from its existing power station, and to reduce Wisconsin's dependence on obtaining power from Illinois via a congested transmission grid connection. The additional 90 MWe provided by each unit would contribute to meeting the goals of the State of Wisconsin to provide efficient and stable nuclear electrical generation.

Environmental Impacts of the Proposed Action:

As part of the licensing process for PBNP Units 1 and 2, the NRC published a Final Environmental Statement (FES) in October 1970, for PBNP Unit 1, and in March 1973 for PBNP Unit 2. The two FESs provide an evaluation of the environmental impacts associated with the operation of PBNP Units 1 & 2 over their licensed lifetimes. In addition, in 2005, the NRC evaluated the environmental impacts of operating PBNP for an additional 20 years beyond its current operating license, and determined that the environmental impacts of license renewal

were small. The NRC staff's evaluation is contained in NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plant, Supplement 23, Regarding Point Beach Nuclear Plant, Units 1 and 2" (SEIS-23) issued in August 2005 (ADAMS) Accession No. ML052230490). The NRC staff used information from the licensee's license amendment request, the FESs, and the SEIS-23 to perform its EA for the proposed EPU.

There will be extensive changes made to the secondary side of the PBNP related to the EPU action, but no new construction is planned outside of existing facilities, and no extensive changes are anticipated to buildings or plant systems that directly or indirectly interface with the environment. All necessary modifications would be performed in existing buildings at PBNP. Modifications to the secondary side of each unit include the following: replacing the high-pressure side of the turbine; replacing all of the feedwater heaters, feedwater and condensate pumps and motors to operate at higher capacity; providing supplemental cooling for some plant systems; implementing electrical upgrades; other modifications to accommodate greater steam and condensate flow rates; and changing setpoints and modifying software.

The sections below describe the non-radiological and radiological impacts in the environment that may result from the proposed EPU.

Non-radiological Impacts

Land Use and Aesthetic Impacts:

Potential land use and aesthetic impacts from the proposed EPU include impacts from plant modifications at PBNP. While some plant components would be modified, most plant changes related to the proposed EPU would occur within existing structures, buildings, and fenced equipment yards housing major components within the developed part of the site. PBNP identified the need for additional EPU project and operating plant support facilities to provide office space for personnel (i.e., trailers) and parking facilities on site. For the placement of the

trailers and construction of parking lots, environmental permitting from the state and county has been obtained. The environmental permits for parking address County Soils and Erosion and Wisconsin Pollution Discharge Elimination System (WPDES) construction storm water requirements. Storm water monitoring for the parking facilities will continue after EPU implementation. There would be no land use changes along transmission lines (no new lines would be required for the proposed EPU), transmission corridors, in switch yards, or in substations.

Land use conditions would not change significantly PBNP, and there would be no significant impact from EPU-related plant modifications on land use and aesthetic resources in the vicinity of PBNP.

Air Quality Impacts:

Air quality within the Point Beach area is generally considered good, with an exception occurring for a designated ozone nonattainment area. PBNP is located in Manitowoc County within the Lake Michigan Intrastate Air Quality Control Region (AQCR). With the exception of the 8-hour standard for ozone, the Lake Michigan AQCR is designated as being in attainment or unclassifiable for all air-quality criteria pollutants in the Environmental Protection Agency's (EPA's) 40 CFR 81.350.

There are approximately 650 people employed at the PBNP on a full-time basis, and 150 long and short-term contractors. This workforce is typically augmented by an additional 700 persons during regularly scheduled refueling outages. For the EPU work conducted during the Spring 2011 outage and the Fall 2011 outage, there will be approximately 1,200 more workers supplementing the typical 700 additional workers scheduled for refueling outages. The workforce numbers would be somewhat larger than for a routine outage and would take longer to complete, but would still be of a relatively short duration (approximately 68 days). A typical

refueling outage typically requires 35 days to complete. During implementation of the EPU at PBNP, some minor and short duration air quality impacts would occur. The main source of the air emissions would be from the vehicles of the additional outage workers needed for the EPU work. An approximate 727 additional truck deliveries will be needed to support EPU modifications for the Spring 2011 outage, and approximately 888 additional truck deliveries will support the EPU modifications for the Fall 2011 EPU modifications.

The majority of the EPU work would be performed inside existing buildings and would not impact air quality. Operation of the reactor at the increased power level would not result in increased non-radioactive emissions that would have a significant impact on air quality in the region. Therefore, there would be no significant impact on air quality during and following implementation of the proposed EPU.

Water Use Impacts

Groundwater:

The PBNP is not connected to a municipal water system, and utilizes groundwater from the Silurian aquifer for potable and sanitary purposes withdrawn from five wells located within the plant yard. PBNP has approval from the Wisconsin Department of Natural Resources through the State's water appropriation permit program for groundwater withdrawal from wells with a combined withdrawal for over 10,000 gallons per day (gpd). Groundwater withdrawals from these five wells at PBNP have historically averaged about 6.5 gallons per minute (gpm) (9,300 gpd). While potable water in the vicinity of PBNP is drawn primarily from Lake Michigan, groundwater does provide potable water for smaller towns and rural residences in the plant region.

Groundwater samples taken from PBNP's supply wells as part of the PBNP site environmental monitoring program have shown no contamination. There are no discharges to

groundwater from PBNP requiring permits by regulatory agencies, and discharge of wastewater to onsite retention ponds ended in 2002.

The EPU is not projected to increase groundwater use or liquid effluent discharges by PBNP during the operating life of the plant. As a result, local and regional groundwater users would not be affected by the proposed EPU. While potable water use would be expected to increase over the short term in association with the influx of the 1,200 additional workers supporting EPU implementation activities, this potential increase would be within the capacity of PBNP's wells and would be unlikely to have any effect on other groundwater users. Therefore, there would be no significant impact on groundwater resources following implementation of the proposed EPU.

Surface Water:

The PBNP uses surface water from Lake Michigan for its once-through cooling system for both units for its plant condenser cooling, auxiliary water systems, the service water system, and for fire protection. The cooling system removes waste heat from the condensers and other plant equipment, and discharges the water through separate flumes for each unit back into Lake Michigan. As described in the licensee's application and SEIS-23, cooling water is circulated through PBNP at 680,000 gpm, and will remain unchanged under EPU conditions. Thus, no change in PBNP's water use or on the availability of water for other Lake Michigan users is expected.

Main condenser cooling water is withdrawn from Lake Michigan at a depth of approximately 22 feet (7 meters) from an offshore intake located approximately 1,750 feet (533 meters) east of the shoreline. The plant has two discharges located about 200 feet (60 meters) from the shoreline. Non-radioactive chemical effluent discharges into Lake Michigan are regulated in accordance with a WPDES permit (WI-0000957-07). The applicant

submitted an application for renewal to the State in December 2008. The current WPDES permit is valid until the new WPDES permit is issued. The licensee's evaluation stated that no significant changes in WPDES permit-regulated discharges to outfalls are expected from EPU-operations. Therefore, there would be no significant impact on surface water resources following implementation of the proposed EPU.

Aquatic Resources Impacts:

The potential impacts to aquatic biota from the proposed action could include impingement, entrainment, and chemical and thermal discharge effects. A permanent acoustic fish-deterrent system was installed around the intake structure at PBNP in 2002, to help reduce the influx of fish into the intake structure and to reduce potential impingement. The intake structure was originally constructed in an area of the lake devoid of fish spawning habitat or nursery grounds, which reduces the rate of entrainment. The proposed EPU will not result in an increase in water being withdrawn from Lake Michigan, nor will it result in an increase in the amount of water discharged to Lake Michigan. Therefore, there would be no potential increase in aquatic impacts from entrainment and impingement as a result of the proposed licensing action. The potential impacts at PBNP would remain consistent with the NRC's conclusion in the SEIS-23, that the aquatic impacts as a result of PBNP operation during the term of license renewal would continue to be small.

However, the proposed EPU will result in an approximate 17 percent increase in the amount of waste heat discharged into Lake Michigan. According to a modeling study performed by the licensee in 2008, the temperature of the discharge water is expected to increase by a maximum of 3.6°F (2.0°C) as a result of the proposed EPU. While the cooling water thermal plume of PBNP is expected to be somewhat larger as a result of the proposed EPU, it is not expected to disrupt the balanced indigenous community of aquatic resources, and will have a

negligible impact on Representative Important Species of Lake Michigan. The current WPDES permit for PBNP does not contain thermal effluent limitations. In addition, the NRC staff concluded in the SEIS-23 that PBNP was in compliance with its current WPDES permit, and was using the best available technology for the minimization of adverse environmental impacts from entrainment, impingement, and heat shock, and further mitigation measures would not be warranted.

The circulating water system and service water system for PBNP are treated with biocides, sodium hypochlorite, and an electrolytic system adding copper to control biofouling from zebra mussels (*Dreissena polymorpha*) and to control algal growth. The NRC staff concluded in the SEIS-23 that there are no significant impacts of discharge of chlorine or other biocides during the license renewal term. The chemicals used for the above treatments at PBNP are regulated through the PBNP WPDES permit. The licensee has noted that they will maintain compliance with the WPDES permit and all other licenses, permits, approvals or other requirements currently held by the plant as a function of the proposed EPU.

The State of Wisconsin Coastal Management Program (WCMP) informed the licensee on March 16, 2010, that the WCMP has no comments on the project and will not conduct a Federal consistency review for PBNP as part of their WPDES permit. Therefore, there would be no significant adverse impacts to the aquatic biota from entrainment, impingement, thermal discharges, or from biocides for the proposed action.

Terrestrial Resources Impacts:

As discussed in the Plant Site and Environs section, the PBNP site consists of approximately 1,260 acres, with over 2 miles (3 kilometers) of shoreline on Lake Michigan. Approximately 104 acres are used for power generation and support facilities. Much of the remaining area (1,050 acres) is farmed, and approximately 100 acres consists largely of woods,

wetlands, and open areas. As previously discussed in the Land Use and Aesthetic Impacts section, the proposed action would not affect land use at PBNP. Therefore, there would be no significant impacts on terrestrial biota associated with the proposed action.

Threatened and Endangered Species Impacts:

Correspondence between the licensee and the U.S. Fish and Wildlife Service (USFWS) in connection with the PBNP license renewal environmental review indicated that no Federally-listed endangered, threatened, or candidate terrestrial or aquatic species are likely to occur in the vicinity of the PBNP site. However, two species that are Federally-listed, the endangered piping plover (*Charadrius melodus*) and the threatened dune or Pitcher's thistle (*Cirsium pitchen*) have been recorded in Manitowoc County. In addition, the dwarf lake iris (*Iris lacustris*) has been documented in Brown County, which is traversed by the PBNP transmission line. The USFWS determined that portions of the PBNP shoreline may be suitable nesting habitat for the piping plover. And there is critical breeding habitat designated for the piping plover at Point Beach State Forest, which is approximately 3 miles (5 kilometers) southeast of PBNP, although no piping plovers have been recorded as breeding at this location. The bald eagle (*Haliaeetus leucocephalus*) (now delisted, but still protected under the Bald and Golden Eagle Protection Act) has not been observed foraging on or near the plant area, but bald eagles have been observed foraging on smaller, interior water bodies that may be found near the transmission lines. Regardless, the planned construction-related activities related to the proposed EPU primarily involve changes to existing structures, systems, and components internal to existing buildings within the plant, and would not involve earth disturbance. While traffic and worker activity in the developed parts of the plant site during the Spring 2011 and Fall 2011 refueling outages would be somewhat greater than a normal refueling outage, the potential impact on terrestrial wildlife would be minor and temporary.

Since there are no planned changes to the terrestrial wildlife habitat on the PBNP site from the proposed EPU, and the potential impacts from worker activity would be minor and temporary, there would be no significant impacts to any threatened or endangered species for the proposed action.

Historic and Archaeological Resources Impacts:

Records at the Wisconsin Historical Society identify several historic and archaeological sites in the vicinity of PBNP and three sites on PBNP property. None of these sites have been determined eligible for listing on the National Register of Historic Places (NRHP). There are a number of historic properties in Manitowoc County listed on the NRHP and the nearest, the Rawley Point Light Station, is within 6 miles (10 kilometers) of PBNP.

As previously discussed, all EPU-related plant modifications would take place within existing buildings and facilities at PBNP, including replacing two electrical transformers on an existing pad. Since no ground disturbance or construction-related activities would occur outside of previously disturbed areas and existing electrical transmission facilities, there would be no significant impact from EPU-related plant modifications on historic sites and to archaeological resources located on and within the vicinity of the PBNP.

Socioeconomic Impacts:

Potential socioeconomic impacts from the proposed EPU include temporary increases in the size of the workforce at the PBNP and associated increased demand for public services, housing, and increased traffic in the region. The proposed EPU could also increase tax payments due to increased power generation.

Currently, there are approximately 800 workers employed at the PBNP, residing primarily in Manitowoc County, Wisconsin. During regularly scheduled refueling outages the number of workers at PBNP increases by as many as 700 workers for 35 days.

The proposed EPU is expected to temporarily increase the size of the refueling outage workforce by approximately 1,200 additional workers. The refueling outage would last approximately 68 days during two refueling outages (one for each unit). The majority of the EPU-related modifications would take place during the Spring 2011 and Fall 2011 refueling outages. Once completed, the size of the refueling outage workforce at the PBNP would return to approximately 700 workers, with no significant increases during future refueling outages. After EPU-related plant modifications, the number of plant operations workers would return to approximately 800 workers.

Most of the EPU-related plant modification workers would relocate temporarily to Manitowoc County, resulting in short-term increases in the local population along with increased demands for public services and housing. Because plant modification work would be short-term, most workers would stay in available rental homes, apartments, mobile homes, and camper-trailers. According to the 3-year average estimate (2006 - 2008) for census housing data, there were nearly 3,200 vacant housing units in Manitowoc County that could potentially ease the demand for local rental housing. Therefore, a temporary increase in plant employment for a short duration would have little or no noticeable effect on the availability of housing in the region.

The additional number of refueling outage workers and truck material and equipment deliveries needed to support EPU-related plant modifications would cause short-term level of service impacts on access roads in the immediate vicinity of PBNP. Due to the short duration of the outages, increased traffic volumes during normal refueling outages typically have not degraded the level of service capacity on local roads. However, an additional 727 truck deliveries are anticipated to support implementation of the EPU modifications during the Spring 2011 outage, and an additional 888 deliveries are anticipated to support the Fall 2011 outage.

Based on this information and given that EPU-related plant modifications would occur during a normal refueling outage, there could be noticeable short term (during certain hours of the day) level-of-service traffic impacts beyond what is experienced during normal outages. During periods of high traffic volume (i.e., morning and afternoon shift changes), work schedules could be staggered and employees and/or local police officials could be used to direct traffic entering and leaving PBNP to minimize level of service impacts on State Route 42.

NextEra pays a lump sum "gross revenue" tax to the State of Wisconsin in lieu of property taxes. Portions of this tax are based on the "net book value" of the PBNP and the amount of megawatts generated. The annual amount of taxes paid by NextEra would increase due to increased power generation. Future tax payments would also take into account the increased net book value of the PBNP as a result of the EPU implementation and "incentive payments", should megawatt production exceed negotiated annual benchmarks as power generation increases.

The proposed EPU would also increase local tax revenues generated by sales taxes and State and Federal income taxes paid by temporary workers residing in Manitowoc County. However, due to the short duration of EPU-related plant modification activities, there would be little or no noticeable effect on tax revenue streams in Manitowoc County. Therefore, there would be no significant adverse socioeconomic impacts from EPU-related plant modifications and operations under EPU conditions in the vicinity of the PBNP.

Environmental Justice Impacts:

The environmental justice impact analysis evaluates the potential for disproportionately high and adverse human health and environmental effects on minority and low-income populations that could result from activities associated with the proposed EPU at the PBNP. Such effects may include human health, biological, cultural, economic, or social impacts.

Minority and low-income populations are subsets of the general public residing in the vicinity of the PBNP, and all are exposed to the same health and environmental effects generated from activities at the PBNP.

The NRC staff considered the demographic composition of the area within a 50-mile (80-km) radius of the PBNP to determine the location of minority and low-income populations and whether they may be affected by the proposed action.

Minority populations in the vicinity of PBNP, according to the U.S. Census Bureau data for 2000, comprise 7.6 percent of the population (approximately 722,000 individuals) residing within a 50-mile (80-kilometer) radius of PBNP. The largest minority group was Hispanic or Latino (approximately 19,000 persons or 2.7 percent), followed by Asian (approximately 17,000 persons or about 2.4 percent). According to the U.S. Census Bureau, about 5.0 percent of the Manitowoc County population identified themselves as minorities, with persons of Asian origin comprising the largest minority group (2.0 percent). According to census data, the 3-year average estimate for 2006–2008 for the minority population of Manitowoc County, as a percent of total population, increased to 6.4 percent, with persons of Hispanic or Latino origin comprising the largest minority group (2.5 percent).

Low-income populations in the vicinity of PBNP, according to 2000 census data, comprise approximately 7,300 families and 40,900 individuals (approximately 3.8 and 5.7 percent, respectively) residing within a 50-mile (80-kilometer) radius of the PBNP. These individuals and families were identified as living below the Federal poverty threshold in 1999. The 1999 Federal poverty threshold was $17,029 for a family of four.

According to census data in the 2006–2008 American Community Survey 3–Year Estimates, the median household income for Wisconsin was $52,249, with 10.7 percent of the State population and 7.0 percent of families determined to be living below the Federal poverty

threshold. Manitowoc County had a lower median household income average ($49,867) than the State of Wisconsin, but had lower percentages of county individuals (7.9 percent) and families (4.8 percent), respectively, living below the poverty level.

Environmental Justice Impact Analysis:

Potential impacts to minority and low-income populations would mostly consist of environmental and socioeconomic effects (e.g., noise, dust, traffic, employment, and housing impacts). Radiation doses from plant operations after the EPU are expected to continue to remain well below regulatory limits.

Noise and dust impacts would be short-term and limited to onsite activities. Minority and low-income populations residing along site access roads could experience increased commuter vehicle traffic during shift changes. Increased demand for rental housing during the refueling outages that would include EPU-related plant modifications could disproportionately affect low-income populations. However, due to the short duration of the EPU-related work and the availability of rental housing, impacts to minority and low-income populations would be short-term and limited. According to census information, there were approximately 3,200 vacant housing units in Manitowoc County.

Based on this information and the analysis of human health and environmental impacts presented in this environmental assessment, the proposed EPU would not have disproportionately high and adverse human health and environmental effects on minority and low-income populations residing in the vicinity of the PBNP.

Non-radiological Impacts Summary:

As discussed above, the proposed EPU would not result in any significant non-radiological impacts. Table 1 summarizes the non-radiological environmental impacts of the proposed EPU at PBNP.

Table 1: Summary of Non-radiological Environmental Impacts

Land Use	No significant impact on land use conditions and aesthetic resources in the vicinity of the PBNP.
Air Quality	Temporary short-term air quality impacts from vehicle emissions related to the workforce. No significant impacts to air quality.
Water Use	Water use changes resulting from the EPU would be relatively minor. No significant impact on groundwater or surface water resources.
Aquatic Resources	No significant impact to aquatic resources due to impingement, entrainment, and chemical or thermal discharges.
Terrestrial Resources	No significant impact to terrestrial resources.
Threatened and Endangered Species	No significant impact to Federally-listed species.
Historic and Archaeological Resources	No significant impact to historic and archaeological resources on site or in the vicinity of the PBNP.
Socioeconomics	No significant socioeconomic impacts from EPU-related temporary increase in workforce.
Environmental Justice	No disproportionately high and adverse human health and environmental effects on minority and low-income populations in the vicinity of the PBNP.

Radiological Impacts

Radioactive Gaseous and Liquid Effluents, Direct Radiation Shine, and Solid Waste

PBNP uses waste treatment systems to collect, process, recycle, and dispose of gaseous, liquid, and solid wastes that contain radioactive material in a safe and controlled manner within NRC and EPA radiation safety standards. The licensee's evaluation of plant operation at the proposed EPU conditions shows that no physical changes would be needed to the radioactive gaseous, liquid, or solid waste systems.

Radioactive Gaseous Effluents

The gaseous waste management systems include the radioactive gaseous system, which manages radioactive gases generated during the nuclear fission process. Radioactive gaseous wastes are principally activation gases and fission product radioactive noble gases resulting from process operations, including continuous degasification of systems, gases collected during system venting, and gases generated in the radiochemistry laboratory. The licensee's evaluation determined that implementation of the proposed EPU would not significantly increase the inventory of carrier gases normally processed in the gaseous waste management system, since plant system functions are not changing and the volume inputs remain the same. The analysis also showed that the proposed EPU would result in an increase (approximately 17.6 percent for noble gases, particulates, radioiodines, and tritium) in the equilibrium radioactivity in the reactor coolant, which in turn increases the radioactivity in the waste disposal systems and radioactive gases released from the plant.

The licensee's evaluation concluded that the proposed EPU would not change the radioactive gaseous waste system's design function and reliability to safely control and process the waste. The existing equipment and plant procedures that control radioactive releases to the environment will continue to be used to maintain radioactive gaseous releases within the dose limits of 10 CFR 20.1302 and the as low as is reasonably achievable (ALARA) dose objectives in Appendix I to 10 CFR Part 50.

Radioactive Liquid Effluents

The liquid waste management system collects, processes, and prepares radioactive liquid waste for disposal. Radioactive liquid wastes include liquids from various equipment drains, floor drains, the chemical and volume control system, steam generator blowdown, chemistry laboratory drains, laundry drains, decontamination area drains and liquids used to

transfer solid radioactive waste. The licensee's evaluation shows that the proposed EPU implementation would not significantly increase the inventory of liquid normally processed by the liquid waste management system. This is because the system functions are not changing and the volume inputs remain the same. The proposed EPU would result in an increase (approximately 17.6 percent) in the equilibrium radioactivity in the reactor coolant which in turn would impact the concentrations of radioactive nuclides in the waste disposal systems.

Since the composition of the radioactive material in the waste and the volume of radioactive material processed through the system are not expected to significantly change, the current design and operation of the radioactive liquid waste system will accommodate the effects of the proposed EPU. The existing equipment and plant procedures that control radioactive releases to the environment will continue to be used to maintain radioactive liquid releases within the dose limits of 10 CFR 20.1302 and ALARA dose standards in Appendix I to 10 CFR Part 50.

Occupational Radiation Dose at EPU Conditions

The licensee stated that the in-plant radiation sources are expected to increase approximately linearly with the proposed increase in core power level. To protect the workers, the plant's radiation protection program monitors radiation levels throughout the plant to establish appropriate work controls, training, temporary shielding, and protective equipment requirements so that worker doses will remain within the dose limits of 10 CFR Part 20 and ALARA.

In addition to the work controls implemented by the radiation protection program, permanent and temporary shielding is used throughout the PBNP to protect plant personnel against radiation from the reactor and auxiliary systems containing radioactive material. The licensee determined that the current shielding design, which uses conservative analytical

techniques to establish the shielding requirements, is adequate to offset the increased radiation levels that are expected to occur from the proposed EPU. The proposed EPU is not expected to significantly affect radiation levels within the plant and therefore there would not be a significant radiological impact to the workers.

Offsite Doses at EPU Conditions

The primary sources of offsite dose to members of the public from the PBNP are radioactive gaseous and liquid effluents. As discussed above, operation at the proposed EPU conditions will not change the radioactive gaseous and liquid waste management systems' abilities to perform their intended functions. Also, there would be no change to the radiation monitoring system and procedures used to control the release of radioactive effluents in accordance with NRC radiation protection standards in 10 CFR Part 20 and Appendix I to 10 CFR Part 50.

Based on the above, the offsite radiation dose to members of the public would continue to be within regulatory limits and therefore, would not be significant.

Radioactive Solid Wastes

Radioactive solid wastes include solids recovered from the reactor coolant systems, solids that come into contact with the radioactive liquids or gases, and solids used in the reactor coolant system operation. The licensee evaluated the potential effects of the proposed EPU on the solid waste management system. The largest volume of radioactive solid waste is low-level radioactive waste which includes sludge, oily waste, bead resin, spent filters, and dry active waste (DAW) that result from routine plant operation, refueling outages, and routine maintenance. DAW includes paper, plastic, wood, rubber, glass, floor sweepings, cloth, metal, and other types of waste generated during routine maintenance and outages.

As stated by the licensee, the proposed EPU would not have a significant effect on the generation of radioactive solid waste volume from the primary reactor coolant and secondary side systems since the systems functions are not changing and the volume inputs remain consistent with historical generation rates. The waste can be handled by the solid waste management system without modification. The equipment is designed and operated to process the waste into a form that minimizes potential harm to the workers and the environment. Waste processing areas are monitored for radiation and there are safety features to ensure worker doses are maintained within regulatory limits. The proposed EPU would not generate a new type of waste or create a new waste stream. Therefore, the impact from the proposed EPU on radioactive solid waste would not be significant.

Spent Nuclear Fuel

Spent fuel from the PBNP is stored in the plant's spent fuel pool and in dry casks in the Independent Spent Fuel Storage Installation. The PBNP is licensed to use uranium-dioxide fuel that has a maximum enrichment of 5 percent by weight uranium-235. The typical average enrichment is approximately 4.8 percent by weight of uranium-235. The average fuel assembly discharge burnup for the proposed EPU is expected to be approximately 52,000 megawatt days per metric ton uranium (MWd/MTU) with no fuel pins exceeding the maximum fuel rod burnup limit of 62,000 MWd/MTU. The licensee's fuel reload design goals will maintain the PBNP fuel cycles within the limits bounded by the impacts analyzed in 10 CFR Part 51, Table S-3 - Table of Uranium Fuel Cycle Environmental Data, and Table S-4 - Environmental Impact of Transportation of Fuel and Waste to and from One Light-Water-Cooled Nuclear Power Reactor. Therefore, there would be no significant impacts resulting from spent nuclear fuel.

Postulated Design-Basis Accident Doses:

Postulated design-basis accidents are evaluated by both the licensee and the NRC staff to ensure that PBNP can withstand normal and abnormal transients and a broad spectrum of postulated accidents without undue hazard to the health and safety of the public.

On December 8, 2008, the licensee submitted License Amendment Request (LAR) number 241 (LAR 241) to the NRC, to update its design basis accident analysis. In LAR 241, the licensee requests NRC approval to use a set of revised radiological consequence analyses using the guidance in NRC's Regulatory Guide 1.183, *Alternative Radiological Source Terms* [AST] *for Evaluating Design Basis Accidents at Nuclear Power Reactors*. The analyses for LAR 241 are applicable for the power level in the proposed EPU. The NRC staff is evaluating LAR 241 separately from the EPU to determine if it is acceptable to approve. The results of the NRC's evaluation and conclusion will be documented in a Safety Evaluation Report that will be publically available in ADAMS.

In LAR 241, the licensee reviewed the various design-basis accident (DBA) analyses performed in support of the proposed EPU for their potential radiological consequences and concludes that the analyses adequately account for the effects of the proposed EPU. The licensee states that the plant site and its dose-mitigating engineered safety features remain acceptable with respect to the radiological consequences of postulated DBAs, since the calculated doses meet the exposure guideline values specified in 10 CFR 50.67 and General Design Criteria 19 in Appendix A of 10 CFR Part 50.

The AST amendment is a change to a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The Commission previously issued a proposed finding in the *Federal Register* (74 FR 17230) that the amendment involves no significant hazards consideration, and there has been no public

comment on such finding. The NRC staff must determine that the amendment involves no significant increase in the amounts, and no significant changes in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. Accordingly, the amendment will then meet the eligibility criteria for categorical exclusion as set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with issuance of the amendment.

Radiological Impacts Summary:

As discussed above, the proposed EPU would not result in any significant radiological impacts. Table 2 summarizes the radiological environmental impacts of the proposed EPU at the PBNP.

Table 2: Summary of Radiological Environmental Impacts

Radioactive Gaseous Effluents	Amount of additional radioactive gaseous effluents generated would be handled by the existing system.
Radioactive Liquid Effluents	Amount of additional radioactive liquid effluents generated would be handled by the existing system.
Occupational Radiation Doses	Occupational doses would continue to be maintained within NRC limits.
Offsite Radiation Doses	Radiation doses to members of the public would remain below NRC and EPA radiation protection standards.
Radioactive Solid Waste	Amount of additional radioactive solid waste generated would be handled by the existing system.
Spent Nuclear Fuel	Amount of additional spent nuclear fuel would be handled by the existing system.
Postulated Design-Basis Accident Doses	Calculated doses for postulated design-basis accidents would remain within NRC limits.

Alternatives to the Proposed Action:

As an alternative to the proposed action, the NRC staff considered denial of the proposed EPU (i.e., the "no-action" alternative). Denial of the application would result in no change in the current environmental impacts. However, if the EPU were not approved for the PBNP, other agencies and electric power organizations may be required to pursue other means, such as fossil fuel or alternative fuel power generation, to provide electric generation capacity to offset future demand. Construction and operation of such a fossil-fueled or alternative-fueled plant may create impacts in air quality, land use, and waste management significantly greater than those identified for the proposed EPU at the PBNP. Furthermore, the proposed EPU does not involve environmental impacts that are significantly different from those originally identified in the PBNP Unit 1 or Unit 2 FESs, and the SEIS-23.

Alternative Use of Resources:

The action does not involve the use of any different resources than those previously considered in the PBNP Unit 1 or Unit 2 FESs.

Agencies and Persons Consulted:

In accordance with its stated policy, on April 8, 2011, the NRC staff consulted with the State of Wisconsin official, Jeff Kitsembel, regarding the environmental impact of the proposed action. The State official had no comments.

FINDING OF NO SIGNIFICANT IMPACT

On the basis of the details provided in the EA, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee's application dated April 7, 2009, and supplements dated May 13, 2010, and July 15, 2010 (on environmental issues). These documents may be examined, and/or copied for a fee, at the NRC's Public Document Room (PDR), located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland 20852. Publicly available records will be accessible electronically from the ADAMS Public Electronic Reading Room on the NRC Web site, http://www.nrc.gov/reading-rm/adams.html.

Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS should contact the NRC PDR Reference staff at 1-800-397-4209, or 301-415-4737, or send an e-mail to pdr.resource@nrc.gov.

Dated at Rockville, Maryland, this 13th day of April 2011.

FOR THE NUCLEAR REGULATORY COMMISSION

Terry A. Beltz, Senior Project Manager
Plant Licensing Branch III-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

ENCLOSURE 2

Summary of Comments on the Draft Environmental Assessment and Draft Finding of No Significant Impact

Background:

The U.S. Nuclear Regulatory Commission (NRC) staff published a notice in the *Federal Register* requesting public review and comment on the draft Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) on December 10, 2010 (75 FR 77010), and established January 10, 2011, as the deadline for submitting public comments. Comments and supplemental information were received from NextEra Energy, LLC (NextEra, the licensee); from the Wisconsin Public Service Commission (PSC); and from members of the public. The correspondence associated with the comments is provided in the Agencywide Documents Access and Management System (ADAMS), and available as a matter of public record. A summary of each correspondence is provided in Table 1, including the name of each commenter, their affiliation, a document letter code, the ADAMS accession number, and the number of comments.

Table 1
Comments Received on the Point Beach EPU Draft EA and Draft FONSI

Last Name	First Name	Affiliation	Document Letter	ADAMS Accession Number	Number of Comments
Dums	Dennis	Citizens Utility Board	A	ML110110353	5
Nekola	Katie	Clean Wisconsin	A	ML110110353	5
LaForge	Christopher	Great Northern Solar	B	ML110100330	9
Anonymous		Self	C	ML110130278	1
Hale	Steve	NextEra Energy	D	ML110130279	2
Meyer	Larry	NextEra Energy	D	ML101340103	*
Meyer	Larry	NextEra Energy	D	ML101610711	*
Michetti	Susan	Self	E	ML110110352	9
Michetti	Susan	Self	E	ML110130280	7
Timmerman	Don/Roberta	Self	F	ML110130281	4
LaForge	John	Nukewatch	G	ML110140553	4
Giese	Mark	Self	H	ML110130283	3
Giese	Mark	Self	H	ML110030698	3

Kleppin	Julia	Self	I	ML110180663	5
Loveland	Holly	Self	I	ML110180663	5
Komba	Michael	"Catholic Worker House of Hospitality"	J	ML110130282	3
Kitsembel	Jeff	Wisconsin PSC	K	N/A	**

* Provided supplemental information ** Telephone communication

Comment Review:

The NRC staff reviewed each comment letter, and all comments related to similar issues and topics were grouped together. This attachment presents the comments, or summaries of comments, along with the NRC staff's responses. When comments have resulted in a modification to the draft EA, those changes are noted in the NRC staff's response.

Major Issues and Topics of Concern:

The comments were grouped within the following categories: supplemental information provided to the NRC; terrestrial resources; the need for power; opposition to the license amendment; aquatic resources; in support of the license amendment; the license amendment process; alternative energy sources; radioactive waste; human health; and nuclear safety (Table 2). Next to each set of grouped comments is a four-component code corresponding to: the powerplant ("PB" for Point Beach); the document letter (A – J) that corresponds to the document submitter from Table 1; the number of the comment from that particular commenter; and the two-letter category comment code from Table 2.

Table 2
Draft EA Comment Categories and Comment Codes

Comment Category	Comment Code
Supplemental Information	SI
Terrestrial Resources	TR
Need for Power	NP
Opposition to License Amendment	OA
Aquatic Resources	AS
Support of License Amendment	SA
License Amendment Process	LA
Alternative Energy Sources	AS
Radioactive Waste	RW
Human Health	HH
Nuclear Safety	NS

Disposition of Public Comments on the Draft Environmental Assessment

Supplemental Information (SI)

Comment: PB-D-2-SI

In a December 10, 2010, e-mail to the NRC, NextEra suggested changes to the draft EA based on supplemental information provided in its letter to the NRC dated May 13, 2010 (ADAMS Accession No. ML101340103). The draft EA indicated that 727 additional truck deliveries will be needed to support extended power uprate (EPU) modifications for the spring 2011 outage, and approximately 774 additional truck deliveries will support the EPU modifications during the fall 2011 outage. NextEra indicated that Enclosure 1 of the May 13, 2010, letter, specified an additional 888 truck deliveries will support the EPU modifications for the fall 2011 outage. A subsequent comment from NextEra reiterated the above changes to the number of truck deliveries.

NRC Response:

The NRC staff reviewed the information and incorporated the change from 774 truck deliveries to 888 truck deliveries to support the fall 2011 outage. Consideration of the above comment does not change the conclusion of the FONSI.

Comment: PB-C-1-SI

A member of the public commented that additional construction work was performed at the Point Beach Nuclear Plant (PBNP) but not identified in the draft EA, and noted the inclusion of 22 trailers for office space at PBNP, and the construction of two additional parking facilities.

NRC Response:

The NRC staff reviewed the information from the commenter as well as supplemental information provided by NextEra in its December 10, 2010, e-mail to the NRC verifying the additional construction work, and incorporated the information related to additional construction into the final EA. Consideration of the above comment does not change the conclusion of the FONSI.

Terrestrial Resources (TR)

Comment: PB-K-1-TR

A representative from the Wisconsin PSC provided comments to the NRC staff during a phone conversation, regarding proposed modifications to the PBNP transmission system. The Wisconsin PSC representative indicated that potential upgrades to the transmission facilities may be required to support the proposed EPU, and that the corresponding environmental impacts may need to be evaluated in the EA.

NRC Response:

The NRC conveyed this information to NextEra, regarding the potential need for additional work along the transmission line corridors to support the proposed uprate. In a letter to the NRC dated June 10, 2010 (ADAMS Accession No. ML101610711), NextEra provided additional information about future transmission system upgrades. In the December 10, 2010, letter to the NRC, NextEra stated that network upgrades are recommended for long-term stability of the transmission system. NextEra stated that these specific upgrades were not required to support the proposed EPU. These upgrades are provided in Table 2 of the June 10, 2010, letter, and have been summarized in the EA. NextEra states that the estimated time required to design, procure, and construct these upgrades is 8 to 10 years. Consideration of the above information does not change the conclusion of the FONSI.

Need for Power (NP)

Comments: PB-A-1-NP through PB-A-5-NP

One commenter stated that much of the information provided in the section justifying the need for additional power is outdated and inaccurate as the commenter describes below, and made recommendations for revising this section. The need for the additional power based upon earlier recommendations from the State of Wisconsin for maintaining an 18 percent energy planning reserve margin is outdated and inaccurate as described in the draft EA. The

forecasted energy annual growth rate in Wisconsin of over 2 percent is outdated and inaccurate. Wisconsin has excess electrical generating capacity. The statement that the proposed EPU will reduce Wisconsin's dependence on obtaining power from Illinois is outdated. The proposed uprate would actually result in the need to build more transmission in Wisconsin. The NRC should update the draft EA statements such that the proposed EPU is not needed to reduce congestion on Wisconsin's transmission grid connection. The final EA should state that Wisconsin does not have a goal of promoting nuclear power. The comments express doubt of the need for additional electrical power in Wisconsin, and cite more recent documents from the Wisconsin PSC than provided by the licensee which do not indicate the same need for power as stated by the licensee in the Environmental Report (ER).

NRC Response:

The staff agrees with the comments. The staff changed the final EA to reflect the licensee's need for power, and to not include any references to the strategies of the State of Wisconsin for maintaining an electrical power margin. Consideration of the above comment does not change the FONSI.

Opposition to License Amendment (OA)

Comments: PB-B-1-OA; PB-B-5-OA; PB-B-8-OA; PB-E-7-OA; PB-E-16-OA; PB-F-3-OA; PB-H-6-OA; PB-I-1-OA

The comments are in general opposition to the EPU and continued operation of the plant, based upon the age and physical condition of the plant, its operating performance, its history of repairs, and general accident and safety issues.

NRC Response:

The comments relate to past operational events at PBNP that are outside the scope of this EA. However, the staff offers the following about the NRC's oversight of nuclear power plants. To ensure that nuclear power plants are operated safely, the NRC licenses the plants to

operate, licenses the plant operators, and establishes license conditions for the safe operation of each plant. The NRC provides continuous oversight of the plant through its Reactor Oversight Process (ROP) to verify that they are being operated in accordance with NRC regulations. The NRC has full authority to take whatever action is necessary to protect public health and safety. The PBNP Units 1 and 2 received a license renewal from the NRC in 2005 to operate for another 20 years, which extends the operating life of Units 1 and 2 to 2030 and 2032, respectively. During this time period, the licensee will need to comply with all health, safety, and environmental requirements contained within the license as well as comply with all other Federal, State, and local requirements for continued operation of PBNP Units 1 and 2.

Therefore, no change was made to the EA based on the comments.

Aquatic Resources (AR)

Comment: PB-E-1-AR

One commenter indicated that the NRC's draft EA does not state explicitly any effects on aquatic communities in Lake Michigan from the proposed EPU.

NRC Response:

The EA evaluated the potential impacts to aquatic biota from the proposed action, including potential impacts from impingement, entrainment, and chemical and thermal discharge effects. The potential impacts were discussed in the section "Aquatic Resources Impacts". To summarize, the proposed EPU would have no impact on aquatic biota from impingement or entrainment, and the proposed EPU would not increase thermal or chemical discharges beyond the permitted limits.

Therefore there are no significant impacts and no change was made to the final EA based on the comments.

Support of License Amendment (SA)

Comment: PB-D-1-SA

One commenter agreed with the conclusions of the report and the FONSI.

NRC Response:

No change was made to the final EA based on the comment.

License Amendment Process (LA)

Comments: PB-E-1-LA; PB-E-8-LA

One commenter noted that she and several others initially were unable to electronically submit their comments. The commenter also requested that comments she submitted during the relicensing evaluation of PBNP be re-evaluated during the evaluation of the proposed EPU.

NRC Response:

All comments received within the thirty (30) day comment period per Title 10 of the *Code of Federal Regulations* (10 CFR) 51.33 have been reviewed. Additionally, comments submitted after the comment period had expired were also addressed. All commenters that had a technical difficulty and then contacted the NRC project manager for PBNP were able to successfully submit their comments by e-mail. The licensee's ER and their additional information submitted to the NRC, information contained in the FESs and SEIS-23, and public comments received were evaluated by the NRC staff. After a thorough evaluation, NRC staff determined that the proposed EPU would not have a significant impact on the environment.

Therefore, no change was made to the final EA based on the comment.

Alternative Energy Sources (AS)

Comment: PB-F-4-AS

One commenter requested that alternative forms of energy be used in the State of Wisconsin.

NRC Response: The NRC staff performed a thorough evaluation of alternative forms of power generation in the SEIS-23. The NRC staff used information in the SEIS-23 and the licensee's ER to perform the EA for the proposed EPU. As stated in the draft EA, construction and operation of such a fossil-fueled plant or alternative-fueled plant may cause impacts to air

quality, land use, and in waste management significantly greater than those identified for the proposed EPU at PBNP.

Therefore, no change was made to the final EA based on the comment.

Radioactive Waste (RW)

Comments: PB-B-4-RW; PB-E-13-RW; PB-F-2-RW; PB-G-1-RW; PB-G-3-RW; PB-H-1-RW; PB-H-4-RW; PB-I-3-RW; PB-J-1-RW

Seven members of the public commented upon the proposed 17 percent increase in the radioactivity in the gaseous and liquid waste produced by the reactors. The comments express doubt that the existing radioactive waste treatment system at PBNP will be able to handle the increased amount of radioactive gaseous and liquid wastes generated by the proposed EPU without improvements or alterations. One commenter stated that the current radioactive waste (spent nuclear fuel) generated at the plant cannot be stored on site, and adding more radioactive waste would lead to a bigger problem. There will be insufficient storage capability in the future and there may not be a place to send the waste.

NRC Response: The NRC staff's environmental assessment of the proposed EPU addressed the potential impacts associated with the increase in radioactivity in the reactor coolant system, waste processing systems, and radioactive effluents released from the plant. The NRC staff concluded that the radioactive waste processing systems at PBNP would be capable of handling the projected increase in radioactivity and that projected radiation doses to members of the public would remain within the dose limits of 10 CFR 20.1301 and the dose objectives in Appendix I to 10 CFR Part 50 and would not pose a significant impact to public health, safety and the environment.

The draft EA evaluated the potential impact of the EPU on spent nuclear fuel and found that the licensee's fuel reload design goals will maintain the fuel's enrichment and burnup parameters within the impact values contained in the NRC's uranium fuel cycle environmental data contained in 10 CFR Part 51. Additionally, the NRC's Waste Confidence Rule, found in

10 CFR 51.23, states that "the Commission has made a generic determination that, if necessary, spent fuel generated in any reactor can be stored safely and without significant environmental impacts for at least 60 years beyond the licensed life for operation (which may include the term of a revised or renewed license) of that reactor in a combination of storage in its spent fuel storage basin and at either onsite or offsite independent spent fuel storage installations. Further, the Commission believes there is reasonable assurance that sufficient mined geologic repository capacity will be available to dispose of the commercial high-level radioactive waste and spent fuel generated in any reactor when necessary."

Therefore, no change was made to the final EA based on the comments.

Human Health (HH)

Comments: PB-B-3-HH; PB-B-6-HH; PB-E-3-HH; PB-E-5-HH; PB-E-11-HH; PB-E-14-HH; PB-G-2-HH; PB-H-2-HH; PB-I-4-HH; PB-J-2-HH

Six members of the public expressed their concern regarding radiation exposure to the public as related to the proposed power uprate. Namely, the commenters believe the proposed EPU will increase the radioactive exposure to the local population. All exposure to ionizing radiation, internal or external, increases one's chances of cancer, birth defects, immune system dysfunction, and other illnesses. The consequences of radiation exposure are known to be far more severe in the case of women, children, infants, fetuses and person with compromised immune systems than in the case of "Reference Man", the archaic, gender-biased and unscientific standard still used by the NRC to estimate radiation risk. One commenter indicated the EA did not discuss the effects of the proposed EPU on the plant workers.

NRC Response: The NRC's primary mission is to protect the public health and safety and the environment from the effects of radiation from nuclear reactors, materials and waste facilities. The NRC's regulatory limits for radiological protection are set to protect workers and the public from the harmful health effects of radiation on humans. The limits are based on the recommendations of standards-setting organizations and reflect extensive scientific study by

national and international organizations. The NRC actively participates in and monitors the work of these organizations to keep current on the latest trends in radiation protection. The calculation models recognized by the NRC for use by nuclear power reactors to calculate dose incorporate conservative assumptions and account for differences in gender and age to ensure that workers and members of the public are adequately protected from radiation.

The draft EA evaluated the potential impacts from the proposed EPU to plant workers. The evaluation discussed that the licensee has a radiation protection program to protect the workers. The radiation protection program at PBNP monitors radiation levels throughout the plant to establish appropriate work controls, training, temporary shielding, and protective equipment requirements.

In addition to the work controls discussed above, PBNP uses permanent and temporary shielding throughout the plant to protect plant personnel against radiation. The draft EA concluded that implementation of the proposed EPU would not change the licensee's ability to maintain worker doses within the limits of 10 CFR Part 20.

All nuclear plants were licensed with the expectation that they would release radioactive material to both the air and water during normal operation. NRC regulations require that radioactive gaseous and liquid releases, including inadvertent releases due to leaks in piping containing radioactive liquids, from nuclear power plants must meet radiation dose-based limits specified in 10 CFR Part 20, and the as low as is reasonably achievable [ALARA] criteria in Appendix I to 10 CFR Part 50, and 40 CFR Part 190. Regulatory limits are placed on the radiation dose that members of the public might receive from all of the radioactive material released by nuclear plants. Nuclear power plants are required to report their radioactive gaseous and liquid releases as well as the results of their radiological environmental monitoring program annually to the NRC. These publically available reports discuss the radiological impacts associated with the operation of PBNP. The annual effluent release and radiological environmental monitoring reports are available to the public through the ADAMS electronic

reading room available through the NRC website (www.nrc.gov). To ensure that nuclear power plants operate safely and maintain radioactive effluent releases within regulatory limits, the NRC licenses the plants to operate, licenses the plant operators, and establishes license conditions for the safe operation of each plant.

The NRC provides continuous oversight of the plant's radiation protection program through its ROP to verify that plant workers are being adequately protected in accordance with NRC regulations. The NRC has full authority to take whatever action is necessary to protect public health and safety.

The NRC staff evaluation in the draft EA concluded that the radioactive waste processing systems at PBNP would be capable of handling the projected increase in radioactivity and that projected radiation doses to members of the public would remain within the dose limits of 10 CFR 20.1301 and the dose objectives in Appendix I to 10 CFR Part 50, and would not pose a significant impact to public health, safety and the environment.

Therefore, no change was made to the final EA based on the comments.

Nuclear Safety (NS)

Comments: PB-B-2-NS; PB-B-7-NS; PB-B-9-NS; PB-E-2-NS; PB-E-4-NS; PB-E-6-NS; PB-E-9-NS; PB-E-12-NS; PB-E-15-NS; PB-F-1-NS; PB-G-4-NS; PB-H-3-NS; PB-H-5-NS; PB-I-2-NS; PB-I-5-NS; PB-J-3-NS

Seven commenters were concerned about safety issues at the plant. Most notably, these comments were related to the age of the reactor with faulty old systems; the inability of the reactor to operate even at low power; losses of safety system functions; leaking pipes and other equipment leaks; the record of operating failures at PBNP; and numerous violations in a relatively short period of time. The commenters also mentioned a loss of electrical power resulting in an "Unusual Event" notification to the NRC, and a subsequent "Red Finding" made by the NRC due to a safety failure.

Additional comments included statements regarding past fines, falsifying information, discrimination, operator error, safety violations and other past violations at PBNP Units 1 and 2.

NRC Response:

The PBNP Units 1 and 2 were granted, consistent with NRC regulations, 40-year operating licenses in 1970 and 1973, respectively. The NRC requires licensees to test, monitor, and inspect the condition of safety equipment and to maintain that equipment in reliable operating condition over the operating life of the plant. The NRC also requires licensees to continuously correct deficiencies that could impact plant safety (e.g., leaking valves, degraded or failed components due to aging or operational events). Over the years, the licensee has replaced or overhauled plant equipment as needed. As appropriate, the licensee has also upgraded equipment or installed new equipment to replace or supplement original systems. The testing, monitoring, inspection, maintenance, and replacement of plant equipment provide reasonable assurance that this equipment will perform its intended safety functions during the 40-year license period. This conclusion applies both to operations under the current license and operations under EPU conditions.

In December 2005, the NRC approved renewal of the operating licenses of the PBNP Units 1 and 2 for a period of 20 additional years, extending the operating licenses of the PBNP Units 1 and 2 to 2030 and 2033, respectively. The safety evaluation report documenting the NRC staff's technical review can be found in NUREG-1839, "Safety Evaluation Report Related to the License Renewal of the Point Beach Nuclear Plant, Units 1 and 2" (ADAMS Accession Nos. ML053420134 and ML053420137). The NRC staff's review concluded that the requirements of 10 CFR 54.29(a) were being met, including the licensee's management of the effects of aging during the period of extended operation on the functionality of structures and components subject to review as described in 10 CFR 54.21.

The NRC's safety regulations are based on the Atomic Energy Act of 1954 as amended, and require a finding of reasonable assurance that the activities authorized by an operating

license (or an amendment thereto) can be conducted without endangering the health and safety of the public, and that such activities will be conducted in compliance with the NRC's regulations.

With respect to the proposed EPU and as discussed in Section 9.0 of the safety evaluation report, the Commission has concluded that there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner and that the authorized activities will be conducted in compliance with the NRC's regulations. The margin of safety is related to confidence in the ability of the fission product barriers (i.e., fuel cladding, reactor coolant pressure boundary, and containment) to limit the level of radiation dose to the public. The NRC staff evaluated the impact of the proposed EPU on the fission product barriers and concluded that the structural integrity of the fission product barriers would be maintained under EPU conditions. As such, the proposed amendment would not degrade confidence in the ability of the barriers to limit the level of radiation dose to the public.

The NRC staff evaluated the impact of the expected changes to plant parameters (e.g., increase in temperatures, flow rates, vibration) as a result of the proposed EPU for the applicable systems or components as described in the relevant sub-sections of the SE, and concluded that there was reasonable assurance that plant systems and components would continue to perform their intended safety functions under EPU conditions. Furthermore, the staff concluded that the structural integrity of the fission product barriers would be maintained under EPU conditions (i.e., even given the increased stress to plant components). The staff concluded that, since there is reasonable assurance that the fission product barriers will limit the level of radiation dose to the public, the proposed EPU would not involve a significant reduction in a margin of safety.

Past events and violations have been reviewed under the NRC's inspection and enforcement programs. The NRC's ROP integrates the NRC's inspection, assessment, and enforcement programs. The operating reactor assessment program evaluates the overall safety

performance of operating commercial nuclear reactors and communicates those results to licensee management, members of the public, and other government agencies. The assessment program collects information from inspections and performance indicators in order to enable the agency to arrive at objective conclusions about a licensee's safety performance. Based on this assessment information, the NRC determines the appropriate level of agency response, including supplemental inspection and pertinent regulatory actions ranging from management meetings up to and including orders for plant shutdown. The NRC conducts follow-up actions, as applicable, to ensure that the corrective actions designed to address performance weaknesses were effective.

The NRC developed requirements to ensure adequate protection or no undue risk to public health and safety through design, construction operation, maintenance, modification, and quality assurance measures. Consistent with that purpose, enforcement actions have been used as a deterrent to emphasize the importance of compliance with these requirements and to encourage prompt identification and prompt, comprehensive correction of violations. The NRC enforcement program supports the overall safety mission in protecting the public health and safety and the environment. The enforcement program: (1) assesses the significance of individual inspection findings and events; (2) formulates the appropriate agency response to these findings and events; (3) emphasizes good performance and compliance; (4) provides incentives for performance improvement; and (5) provides public notification of the NRC's views on licensees' performance and actions. As such, past (and future) events have received a thorough programmatic review and evaluation to ensure the licensee has successfully implemented corrective actions to minimize the potential for recurrence.

Therefore, no change was made to the final EA based on these comments.

April 13, 2011

Mr. Larry Meyer
Site Vice President
NextEra Energy Point Beach, LLC
6610 Nuclear Road
Two Rivers, WI 54241-9516

SUBJECT: POINT BEACH NUCLEAR PLANT (PBNP), UNITS 1 AND 2 – ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT CONCERNING THE PROPOSED EXTENDED POWER UPRATE (TAC NOS. ME1044 AND ME1045)

Dear Mr. Meyer:

Enclosed is a copy of the Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) related to the NextEra Energy Point Beach, LLC (the licensee) application for amendment dated April 7, 2009, as supplemented on May 13 and July 15, 2010 (on environmental issues), for PBNP, Units 1 and 2. The proposed amendment would authorize increasing the maximum thermal power from 1,540 megawatts thermal (MWt) to 1,800 MWt, which is an increase of approximately 17 percent over the current licensed thermal power, and approximately 18 percent from the original licensed thermal power.

The assessment is being forwarded to the Office of the *Federal Register* for publication.

Also enclosed is a summary of the comments received on the draft EA and draft FONSI that was published in the *Federal Register* on December 10, 2010 (75 FR 77010).

Sincerely,

/RA/
Terry A. Beltz, Senior Project Manager
Plant Licensing Branch III-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-266 and 50-301

Enclosures:
1. Environmental Assessment
2. Summary of Public Comments on Draft EA and Draft FONSI

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RidsRgn3MailCenter Resource
RidsNrrDlrRerb Resource
TAlexion, NRR
RidsNrrDorlDpr
Almboden, NRR
RBulavinetz, NRR
SKlementowicz, NRR

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NAME	TBeltz	BTully	Almboden	LSubin	RPascarelli	TBeltz
DATE	04/06/2011	04/07/11	04/07/2011	04/13/2011	04/13/11	04/13/11

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