

## INFORMATIONAL SHEET

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### Background

Point Beach Nuclear Power Plant has two reactors, Unit 1 and Unit 2. The plant is located in Manitowoc County near Two Rivers, WI on the shores of Lake Michigan. The operating company that owns Point Beach is NextEra Energy. The type of reactors are pressurized-water reactors.

NextEra Energy has applied for a subsequent license of extension of 20 years for both reactor units. You can view the application [here](#). An environmental report was required for the application, view NextEra’s environmental report [here](#). The license renewal process has two pathways– 1) review of safety issues and 2) environmental issues.

#### UNIT 1

Operating license issued: 10/05/1970

Renewed license issued: 12/22/2005

License Expires: 10/05/2030

Applied for subsequent license renewal: 11/05/2020

#### UNIT 2

Operating license issued: 03/08/1973

Renewed license issued: 12/22/2005

License expires: 03/08/2033

Applied for subsequent license renewal: 11/05/2020

## Intervenors

The license renewal process for a nuclear reactor has two pathways before a decision by the Nuclear Regulatory Commission (NRC) can be made – 1) legally with a request for a hearing and 2) participating in the Environmental Impact Statement (EIS) process. Intervenors take part in the first pathway, the request for a hearing.

An intervenor is a third party to a legal proceeding begun by others for the protection of an alleged interest. In the case of Point Beach, PSR Wisconsin is filing legal contentions and a petition for a hearing on the license extension application for the reactors at Point Beach. Intervenors are representatives and have an invested or local interest in the situation.

## Environmental Impact Statement

The environmental impact statement (EIS) is a government document that outlines the impact of a proposed project on its surrounding environment. In the United States, these statements are mandated by federal law for certain projects. Environmental impact statements are meant to inform the work and decisions of policymakers and community leaders. In accordance with 10 CFR 51.95(c), the Nuclear Regulatory Commission (NRC) must prepare an environmental impact statement with the renewal of an operation.

The goal of the EIS scoping is to identify specific elements of the environment that might be affected if the renewal of the reactor licenses is carried out. The scoping process is a critical time to identify issues, determine points of contact, determine project schedules and provide recommendations to the agency. The overall goal is to define the scope of issues to be addressed in depth in the analyses that will be included in the EIS. View various topics and points from PSR WI for the scoping process [here](#).

Following the scoping process, the EIS will be drafted and then the draft will be released to the public. After the release, there will be a meeting and comment period in regard to the draft EIS during a 45-day period.

## Embrittlement

Reactor vessels are the thick metal structures that contain the nuclear fission reaction, thus protecting public health by containing the radioactive elements inside the reactor vessels (save for the vented radioactive gases, and any unplanned leaks, spills and accidents). The structure of the metal becomes weakened by exposure to neutron bombardment under the conditions of extreme heat and pressure involved with uranium fission reactions. This leads to embrittled reactors being more at risk of pressurized thermal shock related accident. The degradation of the vessels increases the chance for a serious accident and could endanger staff, Lake Michigan, water supplies, surrounding land, and any person in proximity.

The use and collection of physical testing and data is critical to determine the integrity of the vessels as opposed to only using computer modeling to determine the level of embrittlement.

## Water Intake and Discharge – Lake Michigan

Presently, Point Beach has an average intake withdrawal from Lake Michigan of [914.94 million gallons per day](#). The water intake has the potential to kill fish eggs and larvae as the water must be cleaned and chlorinated before being used by the plant. PSR WI is also concerned about the thermal load placed into Lake Michigan as well as the other industrial effluents from the plant. According to NextEra's environmental report, the average water discharge temperature is [24.3°F](#) above the intake water temperature.

NextEra has applied for a new Wisconsin Pollutant Discharge Elimination System (WPDES) permit from the Wisconsin Department of Natural Resources (DNR). The current permit expires in June 2021.

## Current Status of Nuclear Power in the United States

In the United States, there are 94 operating nuclear units. There have been renewed licenses issued for 94 nuclear units (8 have ceased operations) according to a [January 21, 2021, presentation by the NRC](#). The categories of licenses are listed below:

- 8 units with 40-year licenses (Diablo Canyon will shutdown in 2024/2025)
- 82 units with 60-year licenses
- 4 units with 80-year licenses (Turkey Point and Peach Bottom)

There are currently three applications under review for license extensions including Surry Power Station, Units 1 and 2, North Anna Power Station, Units 1 and 2, and Point Beach, Units 1 and 2.

As of November 2020, there were 21 power reactors undergoing decommissioning as well as 2 power reactors that have permanently ceased operations: Pilgrim and Three Mile Island Unit 1.

The current standards for nuclear power plants set by the Nuclear Regulatory Commission have weakened over time according to an [AP four-part series by Jeff Donn](#).

## Health Perspective and Information

Uranium mining, nuclear disasters, controlled releases, and other exposures through nuclear energy production expose people to unsafe levels of radioactivity. Radiation exposure can result in short-term and long-term effects in every organ system in the body. Radiation can damage living cells and DNA.

Disasters such as Chernobyl and Fukushima have contaminated the surrounding land and water with radioactive fallout and elevated gamma levels. In a nuclear plant accident, radioactive material can enter the body through inhalation, ingestions, contact with skin or blast injection into a wound. The radioactive isotopes released in accidents include Iodine-131 and Cesium-137 and in the most severe accidents, like Chernobyl, other dangerous isotopes can be released like Strontium 90 and Plutonium 239. NAS (National Academy of Science) has studied low energy and dose level radiation and concluded “that it is unlikely that a threshold exists for the induction of cancers” thus [there is no “safe” level of radiation](#).

information about the Fukushima deaths that were not related directly to radiation exposure but rather to the dislocation of people when their health care needs were negatively impacted

Keep in mind that [radiation regulation](#) is based on the “Reference Man” and ignores the risks to more vulnerable populations including pregnant women, infants and children.

In general, just some of the health concerns are:

- Contamination of food (particularly milk, dairy products), meat and public/private drinking water sources
- Greater risk for pregnant women, infants and children
- Cancers
- Birth defects
- Radiation sickness
- Mental health

## Land and Water

Manitowoc County has approximately 1,220 farms with approximately 187,000 tillable acres averaging 153 acres per farm including approximately 195 dairy farms with 55,000 cows. Those acres of precious soil would be unusable for thousands of years following a nuclear accident. The soil, food supply, water and animals would be contaminated and affected.

Over [30 million](#) people depend on the Great Lakes and 10 million depend on Lake Michigan alone for their drinking water supply. Due to the location of Point Beach Nuclear Power Plant on the shores of Lake Michigan, should an accident or leak occur, the damage and consequences would spread far beyond the reach of Wisconsin.

Radioactive isotopes released in accidents include Iodine-131 and Cesium-137. Exposure to I-131 comes from contaminated water, milk, foods or breathing dust particles contaminated with I-131. I-131 accumulates in the thyroid gland, which produces hormones that control how quickly the body uses energy. The thyroid does not distinguish between I-131 and non-radioactive iodine, so the thyroid will accumulate either form. This may increase the risk of thyroid cancer many years later, especially in kids.