

**NUCLEAR REGULATORY COMMISSION**

**[Docket No. 50-155 and 72-043; NRC-2019-0127]**

**Entergy Nuclear Operations, Inc.**

**Entergy Nuclear Palisades, LLC**

**Big Rock Point Independent Spent Fuel Storage Installation**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Exemption; issuance.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) is issuing an exemption from the requirement to maintain a specified level of onsite property damage insurance in response to a request from Entergy Nuclear Operations, Inc. (ENO) dated August 10, 2018. This exemption would permit the Big Rock Point (BRP) Independent Spent Fuel Storage Installation (ISFSI) to reduce its onsite insurance coverage from \$500 million to \$50 million.

**DATES:** The exemption was issued on July 31, 2019.

**ADDRESSES:** Please refer to Docket ID **NRC-2019-0127** when contacting the NRC about the availability of information regarding this document. You may obtain publicly-available information related to this document using any of the following methods:

- **Federal Rulemaking Web Site:** Go to <https://www.regulations.gov/> and search for Docket ID **NRC-2019-0127**. Address questions about NRC docket IDs in [Regulations.gov](https://www.regulations.gov/) to Jennifer Borges; telephone: 301-287-9127; e-mail: [Jennifer.Borges@nrc.gov](mailto:Jennifer.Borges@nrc.gov). For technical questions, contact the individual listed in the

**FOR FURTHER INFORMATION CONTACT** section of this document.

- **NRC's Agencywide Documents Access and Management System**

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- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

**FOR FURTHER INFORMATION CONTACT:** Norma García Santos, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: 301-415-6999, e-mail: [Norma.GarciaSantos@nrc.gov](mailto:Norma.GarciaSantos@nrc.gov).

**SUPPLEMENTARY INFORMATION:**

**I. Background**

Big Rock Point is located in Charlevoix County, Michigan, approximately 11 miles west of Petoskey, on the northern shore of Michigan's Lower Peninsula. The BRP nuclear plant was a boiling water reactor rated at 75 MW electric and began commercial operation in March 1963. The plant was permanently shut down on August 29, 1997, and Consumer's Energy (CE) submitted a post shutdown decommissioning activities report on September 19, 1997 (ADAMS Accession No. ML19196A241). In accordance with the requirements of paragraph 50.82(a)(9) of title 10 of the *Code of Federal Regulations* (10 CFR), the licensee submitted BRP's license termination plan (LTP) for its facility. The licensee constructed an onsite ISFSI under its 10 CFR part 50 general

license (SFGL-16) and completed the transfer of all spent nuclear fuel to the ISFSI in May 2003 (ADAMS Accession No. ML031270219). After the release of land from the part 50 license in January 2007 (ADAMS Accession No. ML063410368), the remaining onsite area is a parcel of land approximately 30 acres, within which the ISFSI is located, and an additional parcel of approximately 75 acres adjacent to the ISFSI.

By order dated April 6, 2007 (ADAMS Accession No. ML070740758), the NRC approved the direct transfer of Possession Only License No. DPR-06 for BRP from CE to Entergy Nuclear Palisades, LLC (ENP), and ENO, and approved a conforming license amendment, pursuant to 10 CFR 50.80, "Transfer of licenses," and 10 CFR 72.50, "Transfer of license," to reflect the change. The order was published in the *Federal Register* (FR) on April 16, 2007 (72 FR 19056). Accordingly, the project name was changed from Big Rock Point Restoration Project to Big Rock Point ISFSI.

## **II. Request/Action**

The BRP site currently maintains \$500 million in onsite insurance coverage in accordance with a previous exemption approved by the NRC on November 3, 1982 (ADAMS Accession No. ML19196A229). Under 10 CFR 50.12, "Specific exemptions," BRP has requested an exemption from 10 CFR 50.54(w)(1) by letter dated August 10, 2018 (ADAMS Accession No. ML18222A394). The exemption from the requirements of 10 CFR 50.54(w)(1) would permit BRP to reduce its onsite property damage insurance from \$500 million to \$50 million. This second exemption is being requested to allow reduced insurance coverage commensurate with the significantly reduced risks associated with a single reactor facility that has ceased operation, permanently defueled, and transferred all Spent Nuclear Fuel (SNF), Special Nuclear Material (SNM), and Greater Than Class C (GTCC) waste to dry fuel storage (DFS) casks stored in an ISFSI.

The regulation in 10 CFR 50.54(w)(1) requires each licensee to have and maintain onsite property damage insurance to stabilize and decontaminate the reactor and reactor site in the event of an accident. The onsite insurance coverage must be either \$1.06 billion or whatever amount of insurance is generally available from private sources (whichever is less).

In its application, the licensee stated that there is a reduced potential for, and consequences of, a fuel handling accident or a fuel zirconium fire. Because reactor operation is no longer authorized at BRP, there are no events that would require the stabilization of reactor conditions after an accident. Similarly, the risk of an accident that would result in significant onsite contamination at BRP is also much lower than the risk of such an event at operating reactors. In addition, plant structures have been removed from the site, and non-ISFSI related portions of the site have been released from the BRP part 50 license for unrestricted use. Therefore, BRP requested an exemption from 10 CFR 50.54(w)(1) that would permit a reduction of its onsite property damage insurance from \$500 million to \$50 million, commensurate with an ISFSI only facility, which is consistent with the underlying purpose of the rule.

### **III. Discussion**

Pursuant to 10 CFR 50.12, the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of 10 CFR part 50 when: 1) the exemptions are authorized by law, will not present an undue risk to public health or safety, and are consistent with the common defense and security; and 2) any of the special circumstances listed in 10 CFR 50.12(a)(2) are present.

The financial protection limits of 10 CFR 50.54(w)(1) were established after the Three Mile Island accident out of concern that licensees may be unable to financially

cover onsite cleanup costs in the event of a major nuclear accident. The specified coverage requirement (\$1.06 billion) was developed based on an analysis of an accident at a nuclear reactor operating at power, resulting in a large fission product release and requiring significant resource expenditures to stabilize the reactor conditions and ultimately decontaminate and clean up the site.

The NRC developed cost estimates from the spectrum of postulated accidents for an operating nuclear reactor and the consequences of any associated release of radioactive material from the reactor. Although the risk of an accident at an operating reactor is very low, the consequences can be large. In an operating plant, the high temperature and pressure of the reactor coolant system, as well as the inventory of relatively short-lived radionuclides, contribute to both the risk and consequences of an accident. With the permanent cessation of reactor operations at BRP, the permanent removal of the fuel from the reactor core, and the movement of all the irradiated fuel assemblies into storage at the onsite ISFSI, such accidents are no longer possible. As a result, the reactor, reactor coolant system, and supporting systems no longer operate, and these components have already been dismantled and removed from the site as part of the decommissioning process. Therefore, these systems and components no longer serve any function related to the storage of the irradiated fuel. As such, postulated accidents involving failure or malfunction of the reactor, reactor coolant system, or supporting systems are no longer applicable at BRP.

During reactor decommissioning, the principal radiological risks are associated with the storage of spent fuel onsite, as well as the inventory of radioactive liquids, activated reactor components, and contaminated materials. In its August 10, 2018 (ADAMS Accession No. ML18222A394), exemption request, BRP noted that because all of the spent fuel is stored in dry fuel storage casks in an ISFSI, a fuel handling accident

and a zirconium fire caused by drain down of the spent fuel pool are no longer considered credible events. In the current state of decommissioning at BRP, no liquid and airborne effluent releases resulting from decommissioning activities are considered credible events. In addition, decontamination activities have been completed and the site lands other than those associated with the ISFSI have been released from the BRP part 50 license. The licensee stated that this results in a significant reduction in the number and severity of potential accidents involving a significant adverse effect on public health and safety.

In addition, given that all the irradiated fuel assemblies at BRP have already been moved into storage at the onsite ISFSI, the fuel is no longer thermal-hydraulically capable of sustaining a zirconium fire, and can be air-cooled in all credible accident scenarios and fuel configurations. The NRC staff has previously authorized a lesser amount of onsite property damage insurance coverage based on an analysis of the zirconium fire risk. In SECY-96-256, "Changes to Financial Protection Requirements for Permanently Shutdown Nuclear Power Reactors, 10 CFR 50.54(w)(1) and 10 CFR 140.11," dated December 17, 1996 (ADAMS Accession No. ML15062A483), the NRC staff recommended changes to the power reactor insurance regulations that would allow licensees to lower onsite insurance levels to \$50 million upon demonstration that the fuel stored in the spent fuel pool can be air-cooled and could account for the postulated rupture of a large liquid radiological waste tank at the site, should such an event occur.

In its Staff Requirements Memorandum to SECY-96-256, dated January 28, 1997 (ADAMS Accession No. ML15062A454), the Commission supported the staff's recommendation that, among other things, would allow permanently shutdown power reactor licensees to reduce commercial onsite property damage insurance coverage to \$50 million when the licensee was able to demonstrate the technical

criterion that the spent fuel could be air-cooled if the spent fuel pool was drained of water, and could account for the postulated rupture of a large liquid radiological waste tank at the site. In SECY-96-256, the postulated large liquid radiological waste storage tank rupture event was determined to have a bounding onsite cleanup cost of approximately \$50 million. The staff has used this technical criterion to grant similar exemptions to other decommissioning reactors (e.g., Fort Calhoun Station, published in the *Federal Register* on April 6, 2018 (83 FR 14898); and La Crosse Boiling Water Reactor, published in the *Federal Register* on August 1, 2018 (83 FR 37532)). These prior exemptions were based on the licensees demonstrating that the spent fuel could be air-cooled, consistent with the technical criterion discussed above. Accordingly, for BRP, decommissioning of the site is complete and the site lands other than those associated with the ISFSI have been released for unrestricted use. Additionally, all SNF, SNM, and GTCC waste are stored in DFS casks at the ISFSI. Therefore, the NRC staff determined \$50 million to be an adequate level of onsite property damage insurance coverage for the BRP site, given that 1) all SNF, SNM, and GTCC waste is stored in the BRP ISFSI and the spent fuel is no longer susceptible to a zirconium fire; and 2) the inventory of radioactive liquids at the site has been eliminated such that liquid and airborne effluent releases are no longer considered credible events.

#### **A. Authorized by Law**

The regulation in 10 CFR 50.54(w)(1) requires each licensee to have and maintain onsite property damage insurance of either \$1.06 billion or whatever amount of insurance is generally available from private sources, whichever is less. In accordance with 10 CFR 50.12, the Commission may grant exemptions from the regulations in 10 CFR part 50, as the Commission determines are authorized by law.

As explained above, the NRC staff has determined that the licensee's proposed reduction in onsite property damage insurance coverage to a level of \$50 million is consistent with the basis provided in SECY-96-256 because there is no credible risk of a zirconium fire with all irradiated fuel stored in the onsite ISFSI, where it is air-cooled in all accident scenarios, all SNM and GTCC waste is stored in the ISFSI, and the inventory of radioactive liquids at the site has been eliminated such that liquid and airborne effluent releases are no longer considered credible events.

The NRC staff has determined that granting of the licensee's proposed exemption will not result in a violation of the Atomic Energy Act of 1954, or other laws, as amended. Therefore, based on its review of BRP's exemption request, as discussed above, and consistent with SECY-96-256, the NRC staff concludes that the exemption is authorized by law.

#### **B. No Undue Risk to Public Health and Safety**

The onsite property damage insurance requirements of 10 CFR 50.54(w)(1) were established to provide financial assurance that following a significant nuclear accident, onsite reactor conditions could be stabilized, and the site decontaminated. The requirements of 10 CFR 50.54(w)(1) and the existing level of onsite insurance coverage for BRP are predicated on the assumption that the reactor is operating. However, the BRP reactor has been permanently shutdown, defueled, and removed from the site, with all SNF, SNM, and GTCC waste stored in an ISFSI, and the inventory of radioactive liquids at the site has been eliminated such that liquid and airborne effluent releases are no longer considered credible events. The permanently defueled status of the facility has resulted in a significant reduction in the number and severity of potential accidents, and correspondingly, a significant reduction in the potential for, and severity of, onsite property damage. The proposed reduction in the amount of onsite insurance coverage



does not impact the probability or consequences of any potential accidents. The proposed level of insurance coverage is commensurate with the reduced risk and reduced cost consequences of potential nuclear accidents at BRP. Therefore, the NRC staff concludes that granting the requested exemption will not present an undue risk to the health and safety of the public.

### **C. Consistent with the Common Defense and Security**

The proposed exemption would not eliminate any requirements associated with physical protection of the site and would not adversely affect BRP's ability to physically secure the site or protect special nuclear material. Physical security measures at BRP are not affected by the requested exemption. Therefore, the proposed exemption is consistent with the common defense and security.

### **D. Special Circumstances**

Under 10 CFR 50.12(a)(2)(ii), special circumstances are present if the application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule. The underlying purpose of 10 CFR 50.54(w)(1) is to provide reasonable assurance that adequate funds will be available to stabilize reactor conditions and cover onsite cleanup costs associated with site decontamination, following a reactor accident that results in the release of a significant amount of radiological material.

The BRP site is permanently shutdown and defueled, and source terms have been removed by placing all SNF, SNM, and GTCC waste in DFS casks in an ISFSI. Decontamination activities associated with the operating reactor have been completed and site lands have been released from the BRP part 50 license for unrestricted use with only the area supporting the ISFSI remaining. Therefore, any radiological consequences of accidents that will remain possible at BRP in the decommissioned ISFSI-only

condition are substantially lower than those at an operating plant. Accordingly, the staff concludes that the application of the current requirements in 10 CFR 50.54(w)(1), as exempted, for BRP to maintain \$500 million in onsite insurance coverage is not necessary to achieve the underlying purpose of the rule for the permanently shutdown and defueled BRP facility.

Under 10 CFR 50.12(a)(2)(iii), special circumstances are present whenever compliance would result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others similarly situated.

The NRC staff concludes that if the licensee was required to continue to maintain an onsite insurance level of \$500 million, the associated insurance premiums would be in excess of those necessary and commensurate with the radiological contamination risks posed by the site in its current configuration. In addition, such insurance levels would be significantly in excess of other decommissioning reactor facilities that have been granted similar exemptions by the NRC.

As such, the NRC staff finds that compliance with the existing rule would result in an undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted and are significantly in excess of those incurred by others similarly situated. Therefore, the special circumstances required by 10 CFR 50.12(a)(2)(ii) and 10 CFR 50.12(a)(2)(iii) exist for the BRP facility.

#### **E. Environmental Considerations**

The NRC approval of an exemption to insurance or indemnity requirements belongs to a category of actions that the Commission, by rule or regulation, has declared to be a categorical exclusion, after first finding that the category of actions does not individually or cumulatively have a significant effect on the human environment.

Specifically, the exemption is categorically excluded from further analysis under 10 CFR 51.22(c)(25).

Under 10 CFR 51.22(c)(25), granting of an exemption from the requirements of any regulation of chapter I to 10 CFR is a categorical exclusion provided that (i) there is no significant hazards consideration; (ii) there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite; (iii) there is no significant increase in individual or cumulative public or occupational radiation exposure; (iv) there is no significant construction impact; (v) there is no significant increase in the potential for or consequences from radiological accidents; and (vi) the requirements from which an exemption is sought involve: surety, insurance, or indemnity requirements.

The NRC staff determined that approval of the exemption request involves no significant hazards consideration because reducing the licensee's onsite property damage insurance for BRP does not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; or 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. The exempted financial protection regulation is unrelated to the operation of BRP. Accordingly, there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite; and no significant increase in individual or cumulative public or occupational radiation exposure.

The exempted regulation is not associated with construction, so there is no significant construction impact. The exempted regulation does not concern the source term (i.e., potential amount of radiation in an accident), nor mitigation. Therefore, there is no significant increase in the potential for, or consequences of, a radiological accident.

In addition, there would be no significant impacts to biota, water resources, historic properties, cultural resources, or socioeconomic conditions in the region. The requirement for onsite property damage insurance involves surety, insurance, and indemnity matters. Therefore, pursuant to 10 CFR 51.22(b) and 10 CFR 51.22(c)(25), no environmental impact statement or environmental assessment need be prepared in connection with the approval of this exemption request.

#### **IV. Conclusions**

The Commission has determined that, pursuant to 10 CFR 50.12(a), the exemption is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security. Also, special circumstances are present. Therefore, the Commission hereby grants BRP an exemption from the requirements of 10 CFR 50.54(w)(1), to permit the licensee to reduce its onsite property damage insurance coverage to a level of \$50 million.

Dated at Rockville, Maryland, this 26<sup>th</sup> day of July, 2019.

For the Nuclear Regulatory Commission.

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