

NUCLEAR REGULATORY COMMISSION

Docket No. 50-293

Entergy Nuclear Operations, Inc.

Pilgrim Nuclear Power Station

Exemption

I. Background.

Entergy Nuclear Operations, Inc. (Entergy, the licensee), is the holder of Renewed Facility Operating License No. DPR-35 for the Pilgrim Nuclear Power Station (Pilgrim). The facility is located in the town of Plymouth, Plymouth County, in the Commonwealth of Massachusetts.

By letter dated November 10, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15328A053), Entergy submitted a notification to the U.S. Nuclear Regulatory Commission (NRC) indicating that it would permanently shut down Pilgrim no later than June 1, 2019. By letter dated June 10, 2019 (ADAMS Accession No. ML19161A033), Entergy submitted to the NRC a certification in accordance with § 50.82(a)(1) of Title 10 of the *Code of Federal Regulations* (10 CFR), stating that Pilgrim permanently ceased power operations on May 31, 2019, and that as of June 9, 2019, all fuel had been permanently removed from the Pilgrim reactor vessel and placed in the spent fuel pool. Accordingly, pursuant to 10 CFR 50.82(a)(2), the Pilgrim renewed facility operating license no longer authorizes operation of the reactor or emplacement or retention of fuel in the reactor vessel.

II. Request/Action.

By letter dated November 16, 2018 (ADAMS Accession No. ML18320A037), Entergy submitted a request for exemption from 10 CFR 50.82(a)(8)(i)(A). The exemption from 10 CFR 50.82(a)(8)(i)(A) would permit Entergy to make withdrawals from the Pilgrim Decommissioning Trust Fund (DTF) for spent fuel management and site restoration activities in accordance with the Pilgrim decommissioning cost estimate. By a separate letter dated November 16, 2018 (ADAMS Accession No. ML18320A036), Entergy submitted an update to the Pilgrim Spent Fuel Management Plan pursuant to 10 CFR 50.54(bb). By another separate letter dated November 16, 2018 (ADAMS Accession No. ML18320A034), as supplemented by letter dated January 9, 2019 (ADAMS Accession No. ML19015A020), Entergy submitted the Post-Shutdown Decommissioning Activities Report and site-specific decommissioning cost estimate for Pilgrim.

The 10 CFR 50.82(a)(8)(i)(A) requirement restricts the use of DTF withdrawals to expenses for legitimate decommissioning activities consistent with the definition of decommissioning that appears in 10 CFR 50.2. The definition of “decommission” in 10 CFR 50.2 reads as follows:

to remove a facility or site safely from service and reduce residual radioactivity to a level that permits—

- (1) Release of the property for unrestricted use and termination of the license; or
- (2) Release of the property under restricted conditions and termination of the license.

This definition does not include activities associated with spent fuel management and site restoration activities. Therefore, an exemption from 10 CFR 50.82(a)(8)(i)(A) is needed to allow Entergy to use funds from the DTF for spent fuel management and site restoration activities.

Similar to 10 CFR 50.82(a)(8)(i)(A), provisions of 10 CFR 50.75(h)(1)(iv) and (h)(2) dictate that with certain exceptions, disbursements from nuclear decommissioning trusts “are restricted to decommissioning expenses.” However, in accord with 10 CFR 50.75(h)(5), these provisions do not apply to “any licensee that as of December 24, 2003, has existing license conditions relating to decommissioning trust agreements, so long as the licensee does not elect to amend those license conditions.” The operating license for Pilgrim included “existing license conditions relating to decommissioning trust agreements” on December 24, 2003, and as such, Pilgrim is exempt from the provisions of paragraphs (h)(1) through (h)(3) of the regulations in 10 CFR 50.75, pursuant to the terms of 10 CFR 50.75(h)(5).

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 (1) when the exemptions are authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security; and (2) when any of the special circumstances listed in 10 CFR 50.12(a)(2) are present. These special circumstances include, among other things:

(a) 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; and

(b) 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.

A. Authorized by Law

The requested exemption from 10 CFR 50.82(a)(8)(i)(A) would allow Entergy to use a portion of the funds from the DTF for spent fuel management and site restoration activities at Pilgrim in the same manner that withdrawals are made under 10 CFR 50.82(a)(8) for decommissioning activities. As stated above, 10 CFR 50.12 allows the NRC to grant exemptions from the requirements of 10 CFR Part 50 when the exemptions are authorized by law. The NRC staff has determined, as explained below, that granting the licensee's proposed exemption will not result in a violation of the Atomic Energy Act of 1954, as amended, or the Commission's regulations. Therefore, the exemption is authorized by law.

B. No Undue Risk to Public Health and Safety

The underlying purpose of 10 CFR 50.82(a)(8)(i)(A) is to provide reasonable assurance that adequate funds will be available for the radiological decommissioning of power reactors and license termination. Based on the site-specific cost estimate and the cash flow analysis, use of a portion of the DTF for spent fuel management and site restoration activities will not adversely impact Entergy's ability to complete radiological decommissioning within 60 years and terminate the Pilgrim license. Furthermore, withdrawals from the DTF for spent fuel management and site restoration should not affect the sufficiency of funds in the DTF to accomplish radiological decontamination of the site because such withdrawals are still constrained by the provisions of 10 CFR 50.82(a)(8)(i)(B) – (C) and are reviewable under the annual reporting requirements of 10 CFR 50.82(a)(8)(v) – (vii).

Based on the above, there are no new accident precursors created by using the DTF in the proposed manner. Thus, the probability of postulated accidents is not increased. Also, based on the above, the consequences of postulated accidents are not increased. No changes are being made in the types or amounts of effluents that may be released offsite. There is no

significant increase in occupational or public radiation exposure. Therefore, the requested exemption will not present an undue risk to the public health and safety.

C. Consistent with the Common Defense and Security

The requested exemption would allow Entergy to use funds from the Pilgrim DTF for spent fuel management and site restoration activities at Pilgrim. Spent fuel management under 10 CFR 50.54(bb) is an integral part of the planned Entergy decommissioning and license termination process and will not adversely affect Entergy's ability to physically secure the site or protect special nuclear material. This change to enable the use of a portion of the funds from the DTF for spent fuel management and site restoration activities has no relation to security issues. Therefore, the common defense and security is not impacted by the requested exemption.

D. Special Circumstances

Special circumstances, in accordance with 10 CFR 50.12(a)(2)(ii), are present whenever application of the regulation in the particular circumstances is not necessary to achieve the underlying purpose of the regulation.

The underlying purpose of 10 CFR 50.82(a)(8)(i)(A), which restricts withdrawals from DTFs to expenses for radiological decommissioning activities, is to provide reasonable assurance that adequate funds will be available for radiological decommissioning of power reactors and license termination. Strict application of this requirement would prohibit the withdrawal of funds from the Pilgrim DTF for activities other than radiological decommissioning activities at Pilgrim, such as for spent fuel management and site restoration activities, until final radiological decommissioning at Pilgrim has been completed.

The total Pilgrim DTF balance as of October 31, 2018, was approximately \$1,051,722,000. The Entergy analysis projects the total radiological decommissioning cost of

Pilgrim to be approximately \$1,187,994,000 (2018 dollars). As required by 10 CFR 50.54(bb), Entergy estimated the costs associated with the long-term spent fuel management at Pilgrim to be \$420.3 million in 2018 dollars.

The NRC staff performed an independent cash flow analysis of the DTF over the 60-year SAFSTOR period (assuming an annual real rate of return of 2 percent, as allowed by 10 CFR 50.75(e)(1)(ii)) and determined the projected earnings of the DTF. The NRC staff confirmed that the current funds in the DTF and projected earnings provide reasonable assurance of adequate funding to complete all NRC-required radiological decommissioning activities, and also to pay for spent fuel management and site restoration activities. Therefore, the NRC staff finds that Entergy has provided reasonable assurance that adequate funds will be available for the radiological decommissioning of Pilgrim, even with the disbursement of funds from the DTF for spent fuel management and site restoration activities. Consequently, the NRC staff concludes that application of the 10 CFR 50.82(a)(8)(i)(A) requirement that funds from the DTF only be used for radiological decommissioning activities and not for spent fuel management and site restoration activities is not necessary to achieve the underlying purpose of the rule; thus, special circumstances are present supporting approval of the exemption request.

By granting the exemption to 10 CFR 50.82(a)(8)(i)(A), the NRC staff considers that withdrawals consistent with the licensee's submittal dated November 16, 2018, are authorized. As stated previously, the NRC staff has determined that there are sufficient funds in the DTF to complete radiological decommissioning activities as well as to conduct spent fuel management and site restoration activities consistent with the Post-Shutdown Decommissioning Activities Report, decommissioning cost estimate, Spent Fuel Management Plan, and the November 16, 2018, exemption request. Pursuant to the requirements in 10 CFR 50.82(a)(8)(v) and (vii), licensees are required to monitor and annually report to the NRC the status of the DTF and the licensee's funding for managing spent fuel. These reports provide the NRC staff with

awareness of, and the ability to take action on, any actual or potential funding deficiencies. Additionally, 10 CFR 50.82(a)(8)(vi) requires that the annual financial assurance status report must include additional financial assurance to cover the estimated cost of completion if the sum of the balance of any remaining decommissioning funds, plus earnings on such funds calculated at not greater than a 2 percent real rate of return, together with the amount provided by other financial assurance methods being relied upon, does not cover the estimated cost to complete the decommissioning. The requested exemption would not allow the withdrawal of funds from the DTF for any other purpose that is not currently authorized in the regulations without prior notification to the NRC.

Special circumstances, in accordance with 10 CFR 50.12(a)(2)(iii), 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 licensee states that the DTF contains funds in excess of the estimated costs of radiological decommissioning and that these excess funds are needed for spent fuel management and site restoration activities. The NRC does not preclude the use of funds from the decommissioning trust in excess of those needed for radiological decommissioning for other purposes, such as spent fuel management or site restoration activities.

The NRC has stated that funding for spent fuel management and site restoration activities may be commingled in the DTF, provided that the licensee is able to identify and account for the radiological decommissioning funds separately from the funds set aside for spent fuel management and site restoration activities (see NRC Regulatory Issue Summary 2001-07, Rev. 1, "10 CFR 50.75 Reporting and Recordkeeping for Decommissioning Planning," dated January 8, 2009 (ADAMS Accession No. ML083440158), and Regulatory Guide 1.184, Revision 1, "Decommissioning of Nuclear Power Reactors," dated October 2013 (ADAMS Accession No. ML13144A840)). Preventing access to those excess funds in the DTF because

spent fuel management and site restoration activities are not associated with radiological decommissioning would create an unnecessary financial burden without any corresponding safety benefit. The adequacy of the DTF to cover the cost of activities associated with spent fuel management and site restoration, in addition to radiological decommissioning, is supported by the site-specific decommissioning cost analysis. If the licensee cannot use its DTF for spent fuel management and site restoration activities, it would need to obtain additional funding that would not be recoverable from the DTF, or the licensee would have to modify its decommissioning approach and methods. The NRC staff concludes that either outcome would impose an unnecessary and undue burden significantly in excess of that contemplated when 10 CFR 50.82(a)(8)(i)(A) was adopted.

The underlying purposes of 10 CFR 50.82(a)(8)(i)(A) would be achieved by allowing Entergy to use a portion of the Pilgrim DTF for spent fuel management and site restoration activities, and compliance with the regulation would result in an undue hardship or other costs that are significantly in excess of those contemplated when the regulations were adopted. Thus, the special circumstances required by 10 CFR 50.12(a)(2)(ii) and 10 CFR 50.12(a)(2)(iii) exist and support the approval of the requested exemption.

E. Environmental Considerations

In accordance with 10 CFR 51.31(a), the Commission has determined that the granting of the exemption will not have a significant effect on the quality of the human environment (see Environmental Assessment and Finding of No Significant Impact published in the *Federal Register* on July 1, 2019 (84 FR 31356)).

IV. Conclusions.

In consideration of the above, the NRC staff finds that the proposed exemption confirms the adequacy of funding in the Pilgrim DTF, considering growth, to complete radiological decommissioning of the site and to terminate the license and also to cover estimated spent fuel management and site restoration activities.

Accordingly, 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 Entergy exemption from the 10 CFR 50.82(a)(8)(i)(A) requirement to allow use of a portion of the funds from the Pilgrim DTF for spent fuel management and site restoration activities in accordance with the Pilgrim Post-Shutdown Decommissioning Activities Report and decommissioning cost estimate, dated November 16, 2018, as supplemented by letter dated January 9, 2019.

This exemption is effective upon issuance.

Dated at Rockville, Maryland, this 22nd day of July, 2019.

For the Nuclear Regulatory Commission.

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Office of Nuclear Reactor Regulation.