NUCLEAR REGULATORY COMMISSION

[Docket No. 50–309]

Maine Yankee Atomic Power Company; Maine Yankee Atomic Power Station; Exemption

I

Maine Yankee Atomic Power Company (MYAPCo or the licensee) is the holder of Facility Operating License No. DPR–36, which authorizes operation of Maine Yankee Atomic Power Station (Maine Yankee). The license provides, among other things, that the facility is subject to all rules, regulations, and orders of the U.S. Nuclear Regulatory Commission (the Commission) now or hereafter in effect. The facility is a pressurized-water reactor located on the licensee's site in Lincoln County, Maine. On August 7, 1997, the licensee informed the Commission that it had decided to permanently cease operations at Maine Yankee and that all fuel had been permanently removed from the reactor. In accordance with 10 CFR 50.82(a)(2), the certifications in the letter modified the facility operating license to permanently withdraw MYAPCo's authority to operate the reactor and to load fuel in the reactor vessel.

II

It is stated in 10 CFR 73.55, ''Requirements for physical protection of licensed activities in nuclear power reactors against radiological sabotage,'' paragraph (a), that ''The licensee shall establish and maintain an onsite physical protection system and security organization which will have as its objective to provide high assurance that activities involving special nuclear material are not inimical to the common defense and security and do not constitute an unreasonable risk to the public health and safety.''

By letter dated November 25, 1997, the licensee requested 11 exemptions from certain requirements of 10 CFR 73.55. Eight exemptions are being granted at this time as follows: (1) 10 CFR 73.55(a)—an exemption from the requirement that a licensed senior operator suspend safeguards measures and assigning that authority to a certified fuel handler; (2) 10 CFR 73.55(e)(1)—an exemption from the requirement that the secondary power supply be located in a security area; (3)—10 CFR 73.55(d)(1) ''an exemption from the requirement that a last access control point at the entrance to the protected area be bullet resistant; (4) 10 CFR 73.55(h)(3)'an exemption reducing the required number of guards and armed trained personnel; (5) 10 CFR 73.55(e)(1)—an exemption from the requirement for a secondary alarm station, (6) 10 CFR 73.55(f)(4)—exemption from the requirement that non-portable communication equipment located in the central alarm station remain operable from independent power sources if normal power is lost, (7) 10 CFR 73.55(e)(1)—exemption from the requirement that an alarm station be located outside the protected area, and (8) 10 CFR 73.55(e)(1) and (c)(6)—exemption from the requirement that the alarm station and new control room be bullet resistant. The proposed exemption is a preliminary step toward enabling MYAPCo to revise the Maine Yankee Security Plan under 10 CFR 50.54(p) to implement a defueled security plan that was developed to protect against radiological sabotage at a permanently shutdown reactor facility with all fuel stored in the spent fuel storage pool.

III

Pursuant to 10 CFR 73.5, ''Specific exemptions,'' the Commission may, upon application of any interested person or upon its own initiative, grant such exemptions in this part as it determines are authorized by law and will not endanger life or property or the common defense and security, and are otherwise in the public interest. The *Code of Federal Regulations* at 10 CFR 73.55 allows the Commission to authorize a licensee to provide alternative measures for protection against radiological sabotage, provided the licensee demonstrates that the proposed measures meet the general performance requirements of the regulation and that the overall level of system performance provides protection against radiological sabotage equivalent to that provided by the regulation.

The underlying purpose of 10 CFR 73.55 is to provide reasonable assurance that adequate security measures can be taken in the event of an act of radiological sabotage. Because of its permanently shutdown and defueled condition, the radiological risk from Maine Yankee is less than the risk from an operating unit. With more than 16 months of radiological and heat decay since the plant was shut down on December 6, 1996, the potential source term associated with the remaining design-basis accidents and radiological sabotage has decreased significantly.

IV

For the foregoing reasons, the Commission has determined that the proposed alternative measures for protection against radiological sabotage meet the same assurance objective and the general performance requirements of 10 CFR 73.55 associated with the reduced risk of radiological sabotage for a permanently shutdown reactor site that has all of the fuel in the spent fuel pool. In addition, the staff has determined that the overall level of the proposed system's performance, as limited by this exemption, would not result in a reduction in the physical protection capabilities for the protection of special nuclear material or of Maine Yankee. Specifically, a limited exemption is being granted for eight (8) specific areas in which the licensee is authorized to modify the existing security plan commitments commensurate with the security threats associated with a permanently shutdown and defueled site, as follows: (1) 10 CFR 73.55(a)—an exemption from the requirement that a licensed senior operator suspend safeguards measures and assigning that authority to a certified fuel handler; (2) 10 CFR 73.55(e)(1)—an exemption from the requirement that the secondary power supply be located in a security area; (3) 10 CFR 73.55(d)(1)—an exemption from the requirement that a last access control point at the entrance to the protected area be bullet resistant; (4) 10 CFR 73.55(h)(3)—an exemption reducing the required number of guards and armed trained personnel; (5) 10 CFR 73.55(e)(1)—an exemption from the requirement a secondary alarm station; (6) 10 CFR 73.55(f)(4)—exemption from the requirement that non-portable communication equipment located in the central alarm station; remain operable from independent power sources if normal power is lost; (7) 10 CFR 73.55(e)(1)—exemption from the requirement that an alarm station be located outside the protected area; and (8) 10 CFR 73.55(e)(1) and (c)(6)—exemption from the requirement that the alarm station and new control room be bullet resistant.

Accordingly, the Commission has determined that pursuant to 10 CFR 73.5, this exemption is authorized by law, will not endanger life or property or the common defense and security, and is otherwise in the public interest. Therefore, the Commission hereby grants MYAPCo a limited exemption as described above from those requirements of 10 CFR 73.55 at Maine Yankee in its permanently defueled condition.

Pursuant to 10 CFR 51.32, the Commission has determined that this exemption will not have a significant effect on the quality of the human

environment (63 FR 35295, dated June 29, 1998).

This exemption is effective upon issuance.

Dated at Rockville, MD, this 29th day of June 1998.

For the Nuclear Regulatory Commission.

Samuel J. Collins,

Director, Office of Nuclear Reactor Regulation.

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NUCLEAR REGULATORY COMMISSION

[Docket No. 50–382]

Entergy Operations, Inc.; Waterford Steam Electric Station, Unit 3; Environmental Assessment and Finding of No Significant Impact

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to Facility Operating License No. NPF–38, issued to Entergy Operations, Inc., (the licensee), for operation of the Waterford Steam Electric Station, Unit 3 (Waterford 3), located in St. Charles Parish, Louisiana.

Environmental Assessment

Identification of the Proposed Action

The proposed action would change the Waterford 3 Technical Specifications to allow an increase in the Waterford 3 Spent Fuel Pool (SFP) storage capacity from 1088 to 2398 fuel assemblies, and to allow an increase in the maximum fuel enrichment from 4.9 w/o (weight percent) to 5.0 w/o U–235. The increase in spent fuel storage capacity is achieved by replacing the existing spent fuel storage racks by the higher density racks, a process referred to herein as ''reracking.'' The proposed action is in accordance with the licensee's application for license amendment dated March 27, 1997, as supplemented by letters dated April 3, July 21, October 23, November 13, and December 12, 1997, January 21, January 29, March 23, May 1, May 19, May 21, May 28, and June 12, 1998.

The Need for the Proposed Action

The Waterford 3 SFP currently contains 1088 storage cells in 16 spent fuel racks and full core off-load capability would be lost in the year 2000. Under the proposed reracking, the 16 existing racks, which contain Boraflex as the neutron absorber, would be removed and replaced by new high density modules. There are no commercial independent spent fuel storage facilities operating in the U.S., nor are there any domestic reprocessing facilities; therefore, the projected loss of storage capacity in the Waterford 3 SFP would affect the licensee's ability to operate Waterford 3. The proposed amendment will provide a full core off-load capability through the end of Cycle 19 (Year 2018).

Environmental Impacts of the Proposed Action

Radiological Impacts

The Waterford 3 uses waste treatment systems designed to collect and process gaseous, liquid, and solid waste that might contain radioactive material. These radioactive waste treatment systems are evaluated in the Final Environmental Statement (FES) dated March 1973. The proposed rerack will not involve any change in the waste treatment systems described in the FES.

Radioactive Material Released to the Atmosphere

During reactor operation, a small percentage of the fuel assemblies in the core are expected to develop leaks, resulting in a release of fission products to the reactor coolant. The storage of additional spent fuel assemblies in the SFP will not significantly affect the release of radioactive gases from the SFP since fission products generally do not escape from the SFP.

The higher fuel burnup used in the new rack analysis will result in a higher concentration of Krypton-85 (Kr-85) in the reactor coolant, some of which will be introduced into the SFP water during refuelings. Accounting for this increased Kr-85 concentration in the SFP water, the licensee calculated that the Kr-85 concentration in the air in the fuel handling building would be two orders of magnitude lower than the permissible effluent concentration for the general public (Appendix B of 10 CFR Part 20).

Iodine-131 released from spent fuel assemblies to the SFP water will not be significantly increased due to the expansion of the fuel storage capacity since the Iodine-131 inventory in the fuel will decay to negligible levels between refuelings.

Most of the tritium in the SFP water results from activation of boron and lithium in the primary coolant. A relatively small amount of tritium is produced during reactor operation by the fission process within the reactor fuel. The subsequent diffusion of the tritium through the fuel and cladding represents a small contribution to the total amount of tritium in the SFP water. Tritium releases from the fuel assemblies to the reactor coolant occur mainly during reactor operation and, to a limited extent, shortly after shutdown. Since a small portion of the tritium is due to fission in the fuel, the increased fuel burnup will result in an increase in the amount of tritium in the reactor coolant.

Most airborne releases of tritium from nuclear power plants result during refuelings from evaporation of reactor coolant, which contains tritium in higher concentrations than in the SFP. The storage of additional spent fuel assemblies in the SFP is not expected to increase the SFP bulk water temperature significantly above the 155° used in the design analysis and, therefore, evaporation rates from the SFP are not expected to increase. The higher tritium concentrations in the SFP water are expected to result in higher airborne tritium levels in the fuel handling building. However, the licensee has calculated these tritium levels to be lower than the permissible effluent concentrations for the general public contained in Appendix B of 10 CFR Part 20.

Solid Radioactive Wastes

Spent resins are generated by the processing of SFP water through the SFP purification system. These spent resins are replaced about two to four times a year and are disposed of as solid radioactive waste. The licensee will use a vacuum system with an underwater filtration unit to clean the floor of the Cask Storage Pit prior to reracking and the floor of the SFP following removal of the old SFP rack modules. Vacuuming of the SFP and Cask Storage Pit will remove any extraneous debris, reduce general contamination levels prior to diving operations, and ensure visual clarity in the SFP to facilitate diving operations and SFP rack changeout. The licensee also plans on hydrolazing the old fuel rack modules with demineralized water before removal from the SFP to remove any loose crud from the modules. If necessary, the licensee may also use a wire brush or equivalent abrasive tool to assist in the removal of hot particles. The licensee does not expect that the additional fuel storage made possible by the increased storage capacity will result in a significant change in the generation of solid radwaste (in the form of spent resins).

Once the old SFP rack modules have been hydrolazed, they will be placed into anti-contamination bags and loaded into shipping containers for shipment offsite for decontamination and disposal. The licensee has stated that the shipping containers and procedures will conform to all applicable U.S.