

7590-01

UNITED STATES NUCLEAR REGULATORY COMMISSION

CONSUMERS POWER COMPANY

DOCKET NO. 50-255

PALISADES PLANT

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. DPR-20 issued to Consumers Power Company (the licensee) for operation of the Palisades Plant, located in Conewago, Michigan.

ENVIRONMENTAL ASSESSMENT

Identification of Proposed Action

The proposed amendment would change the maximum enrichment specified in new fuel storage Technical Specification (TS) 5.4.1 to an assembly planar average of 4.20 weight percent (w/o) U-235 for fuel assemblies with 216 UO_2 , $\text{Gd}_2\text{O}_3\text{-UO}_2$ fuel rods or metal rods. In TS 5.4.2.c, the maximum enrichment for fuel stored in the Region I (NU5) spent fuel storage racks would be increased to an assembly planar average U-235 enrichment of 4.40 w/o. A sentence would also be added which requires spent fuel assemblies having enrichment above 3.27 w/o U-235 to contain 216 UO_2 , $\text{Gd}_2\text{O}_3\text{-UO}_2$ or solid metal rods. TS 5.4.2.e, which specifies the maximum w/o U-235 in the spent fuel stored in the spent fuel pool without regard to the regions in the pool, would be deleted.

The proposed action is in accordance with the licensee's application for amendment dated October 28, 1991, as supplemented by letter dated January 20, 1992.

The Need for the Proposed Action

The proposed changes are needed so that the licensee can use higher fuel enrichment to provide the flexibility of extending the fuel irradiation and to permit operation for longer fuel cycles.

Environmental Impacts of the Proposed Action

The Commission has completed its evaluation of the proposed revisions to the TS. The proposed revisions allow the fresh fuel storage racks to accommodate fuel assemblies enriched to 4.20 w/o U-235 with 216 UO_2 , $Gd_2O_3-UO_2$ fuel rods or metal rods. The Region I (NUS) spent fuel storage racks are approved to accommodate fuel assemblies enriched to 4.40 w/o U-235 provided that fuel assemblies having enrichment above 3.27 w/o U-235 contain 216 UO_2 , $Gd_2O_3-UO_2$ or solid metal rods.

The licensee has made a commitment not to remove any spent fuel racks from the spent fuel pool until analyses confirm that the k-eff resulting from inadvertently dropping a 4.40 w/o fuel assembly into the space vacated by the rack does not exceed 0.95.

Although the Palisades TS have been modified to specify the above-mentioned fuel as acceptable for storage in the fresh or spent fuel racks, evaluations of reload core designs (using any enrichment) will, of course, be performed on a cycle by cycle basis as part of the reload safety evaluation process. Each reload design is evaluated to confirm that the cycle core design adheres to the limits that exist in the accident analyses and TS to ensure that reactor operation is acceptable. The higher enrichment may slightly

change the mix of fission products that might be released in the event of a serious accident, but such small changes would not significantly affect the consequences of serious accidents. No changes are being made in the types or amounts of any radiological effluents that may be released offsite. There is no significant increase in the allowable individual or cumulative occupational radiation exposure.

With regard to potential nonradiological impacts of reactor operation with higher enrichment and extended irradiation, the proposed changes to the TS involve systems located within the restricted area, as defined in 10 CFR Part 20. They do not affect nonradiological plant effluents and have no other environmental impact.

The environmental impacts of transportation resulting from the use of higher enrichment fuel and extended irradiation were published and discussed in the staff assessment entitled, "NRC Assessment of the Environmental Effects of Transportation Resulting from Extended Fuel Enrichment and Irradiation," dated July 7, 1988, and published in the FEDERAL REGISTER (53 FR 30355) on August 11, 1988. As indicated therein, the environmental cost contribution of the proposed increase in the fuel enrichment and irradiation limits are either unchanged or may, in fact, be reduced from those summarized in Table S-4 as set forth in 10 CFR 51.52(c).

Therefore, the Commission concludes that there are no significant radiological or nonradiological environmental impacts associated with the proposed amendment.

Alternative to the Proposed Action

Since the Commission concluded that there are no significant environmental effects that would result from the proposed action, any other alternative would have equal or greater environmental impacts and need not be evaluated.

The principal alternative would be to deny the requested amendment. This would not reduce the environmental impact of plant operations and would result in reduced operational flexibility.

Alternative Use of Resources

This action does not involve the use of any resources not previously considered in the Final Environmental Statement related to operation of the Palisades Plant.

Agencies and Persons Consulted

The NRC staff reviewed the licensee's request and did not consult other agencies or persons.

FINDING OF NO SIGNIFICANT IMPACT

Based upon the foregoing environmental assessment, we conclude that the proposed action will not have a significant effect on the quality of the human environment.

The Commission has determined not to prepare an environmental impact statement for the proposed license amendment.

For further details with respect to this action, see the application for amendment dated October 28, 1991, which is available for public inspection at the Commission's Public Document Room, 2120 L Street, N. W., Washington, D. C. and at the Van Zoeren Library, Hope College, Holland, Michigan 49423.

Dated at Rockville, Maryland, this

FOR THE NUCLEAR REGULATORY COMMISSION

Edmund J. Sullivan, Jr.

Edmund J. Sullivan, Jr., Acting Director
Project Directorate III-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation