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MURRAY R. EDELMAN
VICE PRESIDENT
NUCLEAR

February 19, 1985
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Mr. B. J. Youngblood, Chief
Licensing Branch No. 1
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Perry Nuclear Power Plant, Units 1 & 2
Docket Nos. 50-440; 50-441
Shoreline Erosion Monitoring
Technical Specification

Dear Mr. Youngblood:

This letter provides information to address the SER requirement, section 2.4.7 (p. 2-18, attached), for a Technical Specification for Shoreline Erosion Monitoring.

The safety class structure closest to Lake Erie is the Emergency Service Water (ESW) pump house, which is approximately 380 ft. away. Bluff recession has historically been less than 2 feet/year in the vicinity of the ESW pumphouse. At this rate of recession, it would take over 175 years for the bluff to recede to this structure.

A shoreline protection wall has been installed along the shoreline, which we expect will mitigate the effects of erosion. This design will be reflected in a future FSAR Amendment. As committed in FSAR Section 2.4.5.5.3, a more permanent shoreline protection system will be designed when and if the shoreline erodes to within 250 feet of the EWS pumphouse. It will be installed when and if the shoreline erodes to within 204 feet of the ESW pumphouse. This commitment will also be stipulated as a license condition as reflected in SER Section 1.11.

As discussed in FSAR Section 2.4.5.5.1, to monitor the combined effect of shoreline erosion and bluff recession, a semi-annual (Spring and Fall) survey is being made at six profile locations established at regular intervals along the shoreline. This survey will continue on a semi-annual basis from 1984 through 1989. Since the shoreline protection wall will be inspected and maintained for the life of the plant, the need for surveys will be evaluated after 1989, and surveys eliminated if justified by previous survey results.

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A Technical Specification for shoreline erosion monitoring does not exist in the Standard Technical Specifications. We feel that our present design, monitoring program, FSAR committments as well as the License Condition (1) will assure the ESW pumphouse is not endangered due to shoreline erosion.

We believe that this information is responsive to staff concerns and request the SER be changed to delete the requirement for a Technical Specification on Shoreline Erosion Monitoring.

Very truly yours,

Murray R. Edelman
Vice President
Nuclear Group

MRE:njc

cc: Jay Silberg, Esq.
John Stefano (2)
J. Grobe
S. Brown

than 10 gpm seepage was collected from the lacustrine deposits. No seepage was detected in either the till or shale.

All commitments made by the applicant during the CP review have been satisfied. This review was based on the guidance of NUREG-0800, Section 2.4.12, including Branch Technical Position HGEB-1 on safety-related permanent dewatering systems. The staff, therefore, concludes that the permanent dewatering system meets the requirements of GDC 2, 10 CFR 100, and Appendix A thereto, as well as 10 CFR 50 and GDC 4.

2.4.7 Technical Specifications and Emergency Operation Requirements

Based on its review to the criteria referenced in NUREG-0800, Section 2.4.14, the staff concludes that the applicant's proposed Technical Specifications related to the functioning of the permanent dewatering system (FSAR Section 2.4.13.5.1) are acceptable and meet the requirements of 10 CFR 50 and GDC 2. This conclusion is based on the following.

If the water level in the manholes of the lower, active-component, underdrain subsystem exceeds an elevation of 570.0 ft (USGS), the Commission will be notified and remedial action will be proposed. If the water level exceeds elevation 580.0 ft (USGS), the plant will be shut down and emergency action will be taken to reduce the water level.

A water level exceeding elevation 570.0 ft (USGS) would indicate a water leakage from the plant into the dewatering system that exceeds 550 gpm, a significant loss of pumping capability in the active component subsystem, or a combination of both. If the water level exceeds elevation 580.0 ft (USGS), the overflow level of the gravity flow subsystem (USGS), this would indicate a major failure of one of the following:

(1) the closed cycle, circulating water system;

(2) the natural draft cooling tower basins;

(3) the condensate storage tanks; or

(4) the demineralized water storage tanks.

The two Technical Specifications noted above provide assurance that the plant will not be operated in the unlikely event that the active component subsystem of the permanent dewatering system is inoperative. Furthermore, plant operation is precluded if a major failure occurs in one of the plant's major water systems causing significant inflow to the dewatering system.

Further Technical Specifications regarding shoreline protection were identified in Section 2.4.3. The applicant has made the following three commitments:

(1) Periodically monitor shoreline recession by ground and aerial surveys.

(2) Begin detailed design and construction of shoreline protective measures if the toe of the bluff recedes to within 250 ft of the emergency service water pumphouse.

(3) Complete construction of shoreline protective measures before the toe of the bluff recedes to within 204 ft of the emergency service water pumphouse.

These three commitments provide assurance that the emergency service water pumphouse and other safety-related facilities will not be endangered by the shoreline erosion.

2.4.8 Accidental Releases of Liquid Effluents in Ground and Surface Waters

The accidental release of radioactive liquid of the ground from holding tanks within the plant was considered at the CP stage, and reported in a supplement to the CP-FES. The staff has updated this analysis to include more recent information on the operation of the underdrain system. The staff relief on the guidance of NUREG-0800, Sections 2.4.12 and 2.4.13, Regulatory Guide 1.113, 10 CFR 20, and 10 CFR 100 in performing its analysis is summarized below.

The chemical waste and regenerant bottoms storage tanks in the radwaste building are postulated to fail, spilling their contents on the floor. The 21,000 gal contained in the tanks are then presumed to instantaneously and nonmechanistically leak through the building floor, where they would be collected by the plant's underdrain system. Groundwater seepage would eventually fill the underdrain to overflowing, but this would take a minimum of 6.6 years, allowing ample time to store and treat the spill. However, if left in the underdrain system, dilution of the tank contents by collected groundwater would be about a factor of 81. Gravity overflow from the underdrain system at a rate of 0.5 pgm after 6.6 years would be routed to the service water pumphouse where it would normally be mixed with the blowdown flow and discharged to Lake Erie via the submerged diffuser 2000 ft offshore. For conservatism, however, the release was presumed to be at the shoreline at a rate of 0.5 gpm. The dilution at the nearest municipal water intake (Green Street Station) is estimated to be 2.3×10^6 using parameters suggested in Regulatory Guide 1.113, "Estimating Aquatic Dispersion of Effluents From Accidental and Routine Reactor Releases for the Purpose of Implementing Appendix I," for dispersion in the Great Lakes. The total dilution by ground and surface water of the tank contents at the nearest municipal user would, therefore, be about 1.8×10^7. The travel time would be about 6.6 years.

If radiation monitors failed to stop the underdrain pumps, and effluent was discharged at a rate of 0.5 gpm without first being diluted with collected groundwater, dilution at the nearest municipal water intake would be least a factor of 2.3×10^6, with a travel time of about 1 day. The calculated concentrations of all released radionuclides would be well below the maximum permissible concentrations listed in 10 CFR 20, Appendix B, Table 2 for either of the above cases.

The staff, therefore, concludes that the plant meets the requirements of 10 CFR 100 with respect to potential accidental releases of radioactive effluents.

2.4.9 Conclusions

Based on the independent review and analysis as described above, the staff has found that the applicant has proposed and implemented adequate flood design