



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 15 TO FACILITY OPERATING LICENSE NO. NPF-58

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY, ET AL.

PERRY NUCLEAR POWER PLANT, UNIT NO. 1

DOCKET NO. 50-440

1.0 INTRODUCTION

By letter dated October 2, 1987, The Cleveland Electric Illuminating Company, Duquesne Light Company, Ohio Edison Company, Pennsylvania Power Company, and Toledo Edison Company (the licensees) requested an amendment to Facility Operating License No. NPF-58 for the Perry Nuclear Power Plant, Unit No. 1. The proposed amendment would revise the monitoring program for the determination of the presence of Corbicula (i.e., Asiatic Clams). This program was established in 1982 since there existed the possibility of flow blockage in the Emergency Service Water System due to the growth of water-borne organisms. (Refer to Section 9.2.1.4 of the Perry Updated Safety Analysis Report, (USAR)). The revision proposed by the licensees contains changes in the methods of monitoring for Corbicula at the Perry facility and at the Eastlake Power Plant located on Lake Erie to the west of the Perry facility. Additionally, the licensees propose to establish a communications network/information exchange with agencies involved with monitoring benthic macroinvertebrates on Lake Erie. The first two of these proposed changes involve a revision to Section 4.2.1, Aquatic Monitoring, of the Environmental Protection Plan (EPP), Appendix B to the license.

2.0 EVALUATION

Section 4.2.1(2) of the EPP requires the licensees to conduct semi-annual (e.g., late spring and early fall) sampling for Corbicula in areas adjacent to the Perry intake and discharge structures. The licensees propose in their letter of October 2, 1987, to change the sampling area from the offshore lake bottom to areas within the plant itself where sediments favorable to the growth of Corbicula are found. These areas within the plant proper are those where fine sand deposits accumulate in the Perry raw water systems. Specifically, the areas to be sampled and the sampling frequency are: the service water basin (semi-annually); the traveling screen forebay (quarterly); the traveling screen trash basket (quarterly); the cooling tower basin (plant outages); and the Lake Erie shore beach (weekly). The last area is presently being monitored on a weekly basis due to the potential for shoreline erosion. (It is anticipated that this shoreline sampling may be reduced if the potential for shoreline erosion reduces significantly.)

The rationale for this proposed change is based on consideration of three factors. The first of these is that Corbicula is capable of producing a mucous "drogue" which enables this organism to be carried by water currents directly into a power plant prior to being detected in sediments close to that power plant. Secondly, the lake bottom immediately offshore from the Perry facility is pre-dominantly bedrock with only small pockets of sand. Research within the last few years has shown that the preferred substrate for Corbicula is fine sand. Additionally, the design of the Perry discharge structure minimizes conditions for over-wintering of Corbicula. Thus, the off-shore lake bottom is not considered a hospitable environment for colonization. The third factor is that additional research has demonstrated that such plant areas as the service water basins and sumps provide environments that are more suitable than the offshore lake bottom for development of Corbicula colonies due to consistent water flow and the accumulation of large quantities of fine sand. The net effect is that these plant areas can support clam populations several orders of magnitude larger than those which might exist on the offshore lake bottom.

Based on these considerations, the staff finds that the change proposed by the licensees in the Corbicula monitoring program at the Perry facility is acceptable in that it provides a more effective and direct method of detecting the presence of Corbicula. The proposed revision is also acceptable in that it properly incorporates required changes in the Corbicula monitoring program based on the results of additional research on the ecology and biology of the subject organism in the 5½ years since the original proposal made by the licensees in December 1982.

The licensees also propose to sample the lake bottom sediments at the nearby Eastlake Power Plant using a hand dredge instead of collecting samples by SCUBA divers using suction devices. Since Corbicula has already been determined to be present in the fine sand sediments off-shore from the Eastlake plant, the more sensitive sampling techniques presently used at this facility can be replaced by the dredging technique. We find that this proposed change is acceptable since the revised sampling will still provide the required qualitative determination confirming the continued presence of Corbicula.

Finally, the licensees propose establishing a communications network with agencies involved in benthic sampling in Lake Erie. The staff finds this proposal acceptable in that it will provide a greater amount of information to the licensees concerning the location and the migration patterns of Corbicula.

In summary, the proposed revisions to the Corbicula monitoring program for the Perry facility enhance the sensitivity of detecting the presence of the subject organism both in Lake Erie and within the plant itself. In that these changes will yield an improved monitoring program incorporating the results of a continuing research program on Corbicula, the staff finds this proposed revision will continue to assure the operability of the Emergency Service Water system in accordance with Section 9.2.1.4 of the USAR and is, therefore, acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.21, 51.32, and 51.35, an Environmental Assessment and Finding of No Significant Impact has been prepared and published in the Federal Register on July 19, 1988 (53 FR27248). Accordingly, based upon the environmental assessment, the Commission has determined that the issuance of this amendment will not have a significant effect on the quality of the human environment.

4.0 CONCLUSION

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

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Dated: July 20, 1988