

FEB 17 1977

Docket File
50-313

Docket Nos. 50-313
and 50-368

Mr. John C. White
Regional Administrator
Environmental Protection Agency
Region 6
1600 Patterson, Suite 1100
Dallas, Texas 75201

Dear Mr. White:

The Nuclear Regulatory Commission is nearing the completion of its review of the Arkansas Power and Light Company application for a license to operate Arkansas Nuclear One, Unit No. 2. In accordance with NRC procedures for implementation of the National Environmental Policy Act, a Draft Environmental Statement (DES) was prepared and circulated for comment and comments were received from your office. These comments suggest the need for closer coordination between NRC and EPA in the development of controls and monitoring for Arkansas Nuclear One.

In the past, NRC has included as a condition of our Operation License limits on the concentration of certain substances in the discharge and has imposed certain monitoring requirements to assure protection of aquatic biota. Some of those limitations and monitoring requirements have been duplicative of requirements in NPDES permits. In accordance with the Second Memorandum of Understanding between NRC and EPA for implementation of the Federal Water Pollution Control Act, we would like to resolve water related issues cooperatively with EPA.

Our DES did not fully spell out our intent with regard to monitoring and control upon licensing of ANO, Unit No. 2, nor did your comments fully indicate the path EPA is following with regard to identified issues at ANO. Both the DES and the EPA comments did, however, indicate the need for additional studies at the site. I propose, therefore, that NRC and EPA work together to coordinate the development of controls and monitoring for the station. Enclosed is a summary discussion of the key issues which may warrant consideration.

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Mr. John C. White

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In view of the limited coverage of the identified water quality issues in the existing NPDES permit, we are prepared to incorporate conditions to our license that we find necessary for environmental protection at Arkansas Nuclear One. However, it is desirable that NRC and EPA work together to review those areas where further mitigative measures may be required and to determine appropriate controls and monitoring to be imposed.

If you are in agreement, then please let me know and I will arrange for my staff to meet with you at your convenience.

Sincerely,

Original Signed by
M. R. Denton

Harold R. Denton, Director
Division of Site Safety and
Environmental Analysis
Office of Nuclear Reactor Regulation

Enclosure:
Summary Discussion

cc: w/enclosure
S. Legro, EPA

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AQUATIC IMPACT ISSUES AT ARKANSAS NUCLEAR ONE

1. Intake Structure Impingement Losses

The DES discussed impingement losses at the station (page 5-7). It was estimated "that approximately 27.5 million fish (weighing 470,000 pounds) were impinged during the period from June 10, 1974 to July 29, 1975." The need for additional information to judge the acceptability of this loss was noted.

In commenting on the DES, EPA observed: "There exists a potential for adverse environmental effects due to impingement, and therefore, the impingement rate should continue to be monitored. If future data indicate significant losses, then alternative intake structure design or modification to correct the situation may be required." The NRC staff concurs with the EPA comment. EPA Region 6 staff has advised NRC informally that no 316(b) determination has been made on the ANO intake structure. It is the NRC recommendation that EPA take an active part in the continuation of impingement studies at ANO and in any decision regarding the modification of intake structures.

2. Chlorine Concentration in Discharge

The DES concluded that since limited dilution of the discharge would occur in the discharge embayment, then a free residual chlorine

concentration of 0.5 mg/l as allowed by the NPDES Permit (issued December 16, 1974) could result in impact to aquatic biota (page 5-3). Based on review of several EPA studies of chlorine toxicity (References 1-6), the NRC staff concluded that the limit of 0.1 mg/l total residual chlorine concentration in effect at ANO Unit 1 would protect aquatic biota. The DES also commented that discharge of chlorine at the NPDES permitted concentration might be a violation of State of Arkansas Water Quality Standards which prohibit discharge of substances at toxic levels.

EPA's comments on the DES included the following: "EPA concurs with NRC's recommendation that total residual chlorine discharge be limited to 0.1 mg/l, since the impact of this chlorine concentration on aquatic biota would be less than a chlorine discharge of 0.2 mg/l."

In accordance with Section 511 of the Federal Water Pollution Control Act, the NRC staff believes that NRC should not impose limits different from those imposed in the NPDES Permit. In view of the demonstrated ability of ANO Unit 1 to operate within the NRC imposed constraint, the NRC staff recommends that the NPDES permit be modified to reflect the latest information on chlorine toxicity.

3. Effects of Thermal Discharges

Although the FES for Unit 1 and the Unit 2 DES did not predict specific impacts due to temperature changes, the NRC Appendix B Environmental Technical Specifications for Unit 1 have required a biological surveillance program to detect possible impact. Results of this program

reported by AP&L do include observations of unusual biological changes. These include a large number of deformities in larval fish, large numbers of parasites (hydra) attached to fish in the discharge cove, and a large number of dead, floating molluscs. It cannot be concluded that these occurrences are related to station operation. However, the NRC staff would like to see the studies continued until the possibility of ANO impact can be ruled out.

Since any corrective action at the station would ultimately involve EPA, it is the NRC staff recommendation that EPA be involved in the planning of the continuation of studies even to the extent of modifying the NPDES to incorporate the necessary study requirements.

REFERENCES

1. Basch, R. E. and J. G. Truchan, Calculated Residual Chlorine Concentrations Safe For Fish; Michigan Water Resources Commission, Bureau of Water Management, Water Quality Appraisal Section, September 1974.
2. Basch, R. E. and J. G. Truchan, Toxicity of Chlorinated Power Plant Condenser Cooling Waters to Fish, EPA-600/3-76-009, April 1976.
3. Brungs, W. A., "Effects of Residual Chlorine on Aquatic Life", WPCF, Volume 45, p. 2180. 1973.
4. Tebo, L. B., Jr., "Effluent Limits for Chlorine - Power Plants" letter to H. Zeller, EPA Region IV, May 14, 1975.
5. Water Quality Criteria 1972, A Report of the Committee on Water Quality Criteria, EPA-R3-73-033, March 1973.
6. Quality Criteria For Water, U. S. Environmental Protection Agency, 1976.