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ADDRESS ONLY THE DIRECTOR,
BUREAU OF SPORT FISHERIES
AND WILDLIFE



United States Department of the Interior

FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE
WASHINGTON, D.C. 20240

50-368

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Mr. L. Manning Muntzing
Director of Regulation
U.S. Atomic Energy Commission
Washington, D.C. 20545

Dear Mr. Muntzing:

This is in reply to Mr. DeYoung's letter of October 19, 1970, requesting our comments on the application by the Arkansas Power and Light Company for a construction permit for the proposed Arkansas Nuclear One, Unit 2, Pope County, Arkansas, AEC Docket No. 50-368. We have reviewed the Preliminary Safety Analysis Report and its amendments through No. 13, the applicant's environmental report dated September 10, 1970, and other materials provided by subsequent letters. The comments of the Mid-Atlantic Coastal Fisheries Research Center, MCFRC, Department of Commerce were obtained and are included as part of this review.

Unit 2 will have an electrical output of 950 megawatts and will be constructed adjacent to Unit 1 on the 1100-acre project site. Cooling and dilution water at the rate of about 1700 cfs will be pumped from Dardanelle Reservoir, passed through the condenser where it will be heated 15° F. and returned to the reservoir. The intake structure contains trash racks and traveling screens. Unit 2 will use a closed-cycle cooling system incorporating a cooling tower (type unspecified) to cool the effluent from the condenser. A maximum of 40 cfs of makeup water will be pumped from the reservoir. About 27 cfs of this water will be evaporated from the cooling tower and 13 cfs will be returned to the reservoir. The temperature rise of this discharge is undetermined. Unit 2 will share the intake and discharge structures of Unit 1.

Former Commissioner Pautzke's letter of May 29, 1968, to your Commission, on the construction permit for Unit 1 discussed the fish and wildlife resources in the project area, the effects the project would have on them, and recommended measures to protect these resources from significant damage.

The Department's letter dated March 10, 1971, commenting on the draft environmental statement for Unit 2, discussed several problem areas in the statement that needed elaboration. They related to the effects of Unit 2 by itself and the combined effects of both units on fish and wildlife resources and the environment.

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We still are concerned that a delicate thermal balance may exist in Dardanelle Reservoir and that operation of the two units of the project may result in significant thermal stress and damage to aquatic life. Also, we are concerned that the chlorine used for algae and fungus control and the sulfuric acid, caustic soda, phosphates, and other compounds used for scale and corrosion may damage aquatic life; that a significant number of fish may become entrained and destroyed in the intake system, or become trapped and die on the intake screens; that construction of project transmission lines may have an adverse impact on fish and wildlife resources and the environment; and that the radionuclide buildup in the receiving waters with both units operating may affect fish and wildlife resources adversely.

The preoperational radiological monitoring program for Unit 2 lacks many details. However, the ongoing monitoring program for Unit 1 is more complete and should encompass the emissions from Unit 2. The radiological monitoring program for the entire project would provide for adequate surveillance and protection of the fish and wildlife resources and the environment if the recommendations set forth in our letter of May 29, 1968, on Unit 1 are followed.

The project has the potential of inflicting significant adverse impact on the environment of the area. However, we believe that by exercising care in the design and operation of the condenser cooling water system and with the use of adequate radiological and environmental monitoring programs, major difficulties can be avoided. Therefore, we would have no objection to the issuance of the construction permit.

The applicant has expressed assurance of full cooperation with the Bureau of Sport Fisheries and Wildlife, other Federal agencies, and State and local authorities in developing and carrying out a program for the protection of fish and wildlife resources and the environment.

In view of the importance of the fish and wildlife resources of the project area, we recommend that the Arkansas Power and Light Company:

1. Continue the preoperational radiological and environmental surveys currently being conducted for Unit 1 with necessary expansion of the surveys to encompass the added effects of Unit 2.
2. Continue to prepare reports of these surveys and provide six copies of each to the Director of the Bureau of Sport Fisheries and Wildlife, for evaluation prior to operation of Unit 1.

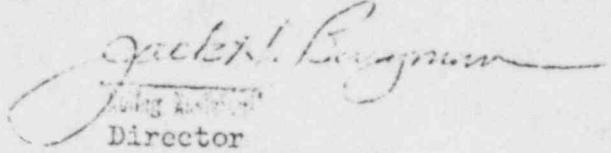
3. Meet with the above-named agencies at frequent intervals to discuss any new or modified plans and the progress of the ecological and radiological surveys.
4. Following startup of Unit 1, conduct postoperational environmental and radiological surveys following plans developed in cooperation with the Bureau of Sport Fisheries and Wildlife and other Federal and State agencies, analyze the data, and prepare and submit reports annually until it has been demonstrated conclusively that no significant adverse conditions exist.
5. Further studies be conducted to determine the need for installing additional facilities to cool the effluent from both units of the project to a temperature that will not cause significant damage to fish and other aquatic life in Dardanelle Reservoir. Such facilities shall be incorporated in the project that the studies demonstrate are needed. Additional cooling towers, cooling ponds, power spray modules, or combination of these or other facilities should be fully considered as alternatives for the once-through cooling system design for Unit 1.
6. Studies be made to determine the effectiveness of the traveling screens at the intake structure to prevent significant loss of fish and other aquatic organisms by entrapment or entrainment in the cooling water system. If the need is demonstrated, project modifications including decreasing intake approach velocities or constructing a bypass for trapped fish may be required and must be fully considered.
7. The impact of project transmission line construction and maintenance on the fish and wildlife resources and the environment be minimized to the extent possible by following the guidelines in the publication entitled, "Environmental Criteria for Electric Transmission Lines" published February 10, 1970, by the Departments of Interior and Agriculture.
8. Additional facilities to reduce or eliminate discharging chemicals or related harmful compounds to Dardanelle Reservoir to protect aquatic life from toxic effects be incorporated in the project. Mechanical means of controlling biological growth, scale, and other harmful or obstructing deposits should be considered. No chlorine shall be released to the environment. Facilities to return all chlorine to the atmosphere, such as evaporating ponds, recirculating the chlorine effluent through the cooling tower, and other modifications or project structures and operations may be required and must be fully considered.

Also, consideration of using plastic pipes or plastic coatings in the cooling system to eliminate the need for corrosion control chemicals should be fully considered.

9. Make modifications in project structures and operations as may be determined necessary to protect the fish and wildlife resources and the environment as a result of the radiological and environmental surveys and other studies.

The opportunity of commenting on the project is appreciated.

Sincerely yours,


J. H. Benjamin
Director