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U. S. Nuclear Regulatory Commission  
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Subject: Arkansas Nuclear One - Unit 2  
Docket No. 50-368  
License No. NPF-6  
Response to Request for Additional Information on the  
Environmental Impact of the Power Uprate License Application

Gentlemen:

In a letter dated December 19, 2000 (2CAN120001), Entergy Operations, Inc. submitted a license application for Arkansas Nuclear One, Unit 2 (ANO-2) to increase the authorized power level from 2815 megawatts thermal to 3026 megawatts thermal. During the NRC's review of the request, personnel from the Generic Issues, Environmental, Financial and Rulemaking Branch asked a question regarding the environmental impacts of the proposed power uprate. The NRC staff requested a written response to the question. The attachment contains the written response. This submittal contains no regulatory commitments.

I declare under penalty of perjury that the foregoing is true and correct.

Very truly yours,

A handwritten signature in dark ink, appearing to read "J. Vandergrift", with a horizontal line extending to the right.

Jimmy D. Vandergrift  
Director, Nuclear Safety Assurance

JDV/dwb  
Attachment

A 001

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## **Response to Request for Additional Information Regarding the Environmental Impacts of the Power Uprate License Amendment Request**

### **NRC Question**

"Explain the environmental impacts of the proposed extended power uprate on land use, water use, aquatic resources, terrestrial resources, and socioeconomic factors. The December 19, 2000, license amendment application refers to the "Generic Environmental Impact Statement for License Renewal of Nuclear Plants," NUREG-1437. Volume 1, 2, its addendum, and draft Supplement 3. Volume 1, 2 and the addendum analyze the environmental impacts of license renewal for nuclear power *plants remaining in operation at the present operating level*. Supplement 3 analyzes the environmental impacts of license renewal at Arkansas Nuclear One, Unit 1, at its current operating power level. While Arkansas Nuclear One, Unit 1 and 2 do share general site characteristics, and it would be appropriate to reference the site characteristics documented in the final Supplement 3 for the proposed extended power uprate license application, the environmental impacts of continued operation at the current operating power level may or may not be the same as the environmental impacts of raising the operating power level by 7.5 percent. Therefore, the environmental impacts of the proposed action (raising the operating power level by 7.5 percent) on land use, water use, aquatic resources, terrestrial resources, and socioeconomic factors, other than those provided in Section 10.4 of the license amendment application, should be analyzed."

### **ANO Response**

#### Land Use

The Arkansas Nuclear One (ANO) site and current land use is described in NUREG-1437, Supplement 3. The power uprate for ANO, Unit 2 (ANO-2) does not change the current land use. No additional facilities or structures are needed to support the power uprate. None of the modifications for power uprate to be completed in the next refueling outage will affect land use. Although power uprate will require a small number of additional spent fuel assemblies per cycle, this will have little or no impact on the dry fuel storage land use.

#### Terrestrial Resources

The discussion of terrestrial resources in Supplement 3 is unaffected by the ANO-2 power uprate. Since no change is being made to the ANO site or to the transmission rights-of-way, power uprate will not disturb any animal habitat in the area. No changes are being made that would affect any rare species or elements of special concern (see Table 2-3 of Supplement 3). No increase in noise from the station will be caused by power uprate.

No changes in transmission facilities are required by the power uprate. The electromagnetic field created by transmission will increase as an essentially linear function of power. In the Generic Environmental Impact Statement, the chronic effects of electromagnetic fields from power lines were given a finding of "not applicable" rather than a Category 1 or 2 designation until a scientific consensus is reached on the health implications of these fields.

#### Water Use

ANO-2 does not use any groundwater. Water from the city of Russellville's water treatment plant is used as potable water and as makeup water for various systems. Lake Dardanelle provides the water supply for the service water system, which in turn provides makeup for the circulating water system. As discussed in Section 10.4 of the Power Uprate Licensing Report submitted December 19, 2000 (2CAN120001), approximately 840 gpm of additional makeup water will be needed for the circulating water system due to increased evaporation from the cooling tower. This increase from 12,180 to 13,020 gpm for makeup is not significant, nor is the slight increase in blowdown flow from the cooling tower basin to the Unit 1 circulating water discharge flume.

#### Aquatic Resources

ANO is built next to Lake Dardanelle, a man-made lake. The lake and its resources are described in Section 2.2.5 of Supplement 3. Because ANO-2 uses a cooling tower as the heat sink for its circulating water system, the only thermal impact on the lake from power uprate will be a slight increase in the service water discharge temperature due to higher heat loads for certain equipment during power operations. The impact on the lake and the aquatic resources of the area will be insignificant.

#### Socioeconomic Factors

Section 2.2.8 of Supplement 3 describes the economy, population, and communities near ANO. The ANO-2 power uprate will have no appreciable impact on this discussion. The size of the work force at ANO is not affected by the power uprate, and the power uprate modifications to be installed during the next refueling outage will have no more effect on the labor force than a typical refueling outage.

The socioeconomic effects of implementing power uprate at ANO-2 are, in part, dependent on Entergy's ability to remain competitive in a deregulated electricity market. Implementation of power uprate is not the primary factor affecting Entergy's overall competitiveness, but it is a factor that must be considered. Entergy has determined that, notwithstanding the uncertainty associated with deregulation, the favorable capital cost of the proposed power uprate compared to new generating capacity, and the reduction in incremental operating costs that result from power uprate, make power uprate attractive. In addition, the investment associated with the power uprate will result in increased power production and revenues, thus enhancing the value of ANO-2 as a provider of electricity.