June 20, 2003

Mr. U. Gale Hutton
Director
Environmental Services Division
U.S. Environmental Protection Agency
Region VII
901 North 5th Street
Kansas City, Kansas 66101

SUBJECT: RESPONSE TO THE U.S. ENVIRONMENTAL PROTECTION AGENCY'S COMMENTS ON THE DRAFT SUPPLEMENT 12 TO THE "GENERIC ENVIRONMENTAL IMPACT STATEMENT FOR LICENSE RENEWAL OF NUCLEAR PLANTS," REGARDING FORT CALHOUN STATION, UNIT 1

Dear Mr. Hutton:

By a letter dated April 10, 2003, the U.S. Environmental Protection Agency (EPA) provided its comments on the U.S. Nuclear Regulatory Commission's (NRC) Draft Supplement 12 to the "Generic Environmental Impact Statement for License Renewal of Nuclear Plants," regarding Fort Calhoun Station, Unit 1 (SEIS). The NRC has attached its response to EPA's comments on the draft SEIS and will address those comments in the final SEIS.

The NRC appreciated the excellent information provided as an attachment to your April 10, 2003, letter addressing thermal plume studies performed by the EPA, the Oregon Graduate Institute and the United States Geologic Survey (USGS) and during a conference call with the following members of your staff: Mr. Cothern and Mr. Dunn. NRC staff was made aware that these studies had been performed during the review process, but were pleased to learn of the breadth of the analysis.

The NRC believes that its license renewal schedule may have led the EPA to conclude that a 10-year lead time existed between issuing the final SEIS and the action of either renewing or not renewing the license. The NRC would like to clarify its schedule for the review of Fort Calhoun Station's license renewal application. The NRC is considering an application for renewal of the operating license for the Fort Calhoun Station, Unit 1 for an additional 20 years beyond the original license expiration date of 2013 (i.e., to 2033). The NRC is scheduled to issue the final SEIS by August 15, 2003, and will make its decision on renewing the license by November 2003. The renewed license, if issued, will supercede the original license and will be valid from date of issuance in November of 2003 until August 9, 2033.

In your letter, questions were raised on how increases in power demand in the area around Fort Calhoun Station over the next 20 years, and the cumulative impacts on the plant on the thermal regime in the Missouri River, were considered in the relicensing process. A response to each of your comments is provided in the enclosure to this letter.

If you have any questions regarding this response to your comments please contact the environmental license renewal project manager, Jack Cushing, by telephone at (301) 415-1424 or by e-mail at jxc9@nrc.gov.

Sincerely,
/RA/

Pao-Tsin Kuo, Program Director
License Renewal and Environmental Impacts Programs
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket No.: 50-285

Enclosure: As stated

cc w/encl: See next page

If you have any questions regarding this response to your comments please contact the environmental license renewal project manager, Jack Cushing, by telephone at (301) 415-1424 or by e-mail at jxc9@nrc.gov.

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The Nuclear Regulatory Commission's Response to the Environmental Protection Agency's Comments on the Draft Supplement 12 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Regarding Fort Calhoun Station, Unit 1

Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

June 2003

1. General Comments: Power consumption and demand growth rate

Changes in power demand are considered in the relicensing process and in the Draft Supplement 12 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Regarding Fort Calhoun Station, Unit 1 (SEIS). Fort Calhoun Station Unit 1 (FCS) is a baseload unit, which means it generally operates at full power. In the short term an increase in power demand will not result in FCS increasing its power output because it is already operating at full power.

Power demands are expected to increase with population and growth of industry over the license renewal period, and this may cause the Omaha Public Power District (OPPD), the licensee for FCS, to seek an increase in the authorized power level for the plant. Any increase in the plant's authorized power level requires OPPD to request an amendment to the FCS operating license. OPPD plans to submit an amendment request to the Nuclear Regulatory Commission (NRC) for a less than two percent power uprate by the end of June 2003. The NRC will then perform a safety evaluation and if the amendment request is found acceptable the NRC will authorize the power increase.

As mentioned in your letter, the recent (September 2001) thermal modeling studies performed by EPA, the United States Geologic Service (USGS), and the Oregon Graduate Institute, indicate that as temperatures in the Missouri River upstream of FCS rise to 88°F, the 90°F limit of the Nebraska Surface Water Quality Standards (Title 117 Chapter 4.003.01B) at the end of the mixing zone may be exceeded. The less than two percent power increase that OPPD plans to submit in June 2003, could have a minor impact on these results, however, it is unlikely as the maximum discharge temperatures from FCS will continue to be limited by the national pollution discharge elimination system (NPDES) permit to 110°F (Permit # NE0000418 or 112°F with the current Consent Order, Case #2206). At this time, the NRC is unaware of any other power uprates for FCS beyond the planned June 2003 request. Any power uprates would require a separate review process.

2. Specific Comments:

<u>Pg 1-1, Line 21-23: License renewal time-line</u>

As mentioned in the body of the letter, the schedule for the review of Fort Calhoun Station's license renewal application should be clarified. The NRC is considering an application for renewal of the operating license for the Fort Calhoun Station, Unit 1 for an additional 20 years beyond the original license expiration date of 2013 (i.e., to 2033). The NRC is scheduled to issue the Supplement 12 to the "Generic Environmental Impact Statement for License Renewal of Nuclear Plants," regarding Fort Calhoun Station, Unit 1 (SEIS) by August 15, 2003, and will make its decision on renewing the license by November 2003. The renewed license, if issued, will supercede the original license and will be valid from date of issuance in November of 2003 until August 9, 2033. We believe that clarification of this schedule addresses the concern raised in the comment.

Pg 2-38, Lines 22-33: License renewal and growth controls

As mentioned above, license renewal reviews consider projections in power demand in relation to population growth. However, a majority of the scenarios considered during the review assume that the plant is operating at full capacity. Therefore, there is a limit to the necessity to consider population growth and its effect on total production capacity of the plant. Increased power demands beyond full power would require additional changes to the plant or construction of a new one, both of which would require a separate environmental review.

Pg 2-49, Lines 18-21: Cumulative impacts

Many sources of information were considered during this license renewal process. On the issue of cumulative impacts on the Missouri River, the major issue relating to plant operation is the thermal impact of cooling system discharges. In reviewing the scientific literature on thermal regimes in the Missouri River, a recent study performed by scientists from the University of Iowa was identified (Wright, et al., 1999). The study utilized available temperature data and a dynamic river flow and mixing model (CHARIMA) to examine the thermal regime in the Missouri from Gavins Point Dam down to Rulo, Nebraska (near the Kansas border). There are at least five power plants along this reach which discharge into the River, two of which (Omaha Units and Council Bluffs) lie between FCS and the confluence of the Platte and Missouri Rivers. This investigation established that, relative to other discharges to the Missouri, the total impact of FCS discharge on the thermal regime of the Missouri is minor (Wright, et al., 1999). This study examined a number of different scenarios beyond those that could result from proposals in the *Missouri River Main Stem Reservoir System Master Manual*, projecting the thermal regime 40 years into the future. The most extreme simulation assumed all the power plants on the reach were operating at maximum capacity, a summer low-flow regime, and an increase in ambient temperature due to global warming. Even under these most extreme conditions, while a cumulative warming effect was demonstrated, water temperatures did not exceed the 90°F (32°C) maximum limit of Title 117 of the Nebraska Surface Water Quality Standards (Title 117 Chapter 4.003.01B). Also under those extreme conditions, average river temperature for the month of August (an indicative summer month) were less than 79°F (26°C). It is the conclusion of NRC staff that these conservative analyses provide evidence that the cumulative impacts of the operation of FCS Unit 1 through 2033 on the thermal regime of the Missouri River will be small.

REFERENCES

Wright, S.A., F.M. Holly Jr., A.A. Bradley, W. Krajewski. 1999. ***Long-term simulation of the thermal regime of Missouri River***. Journal of Hydraulic Engineering. 125(3): 242-252.

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