

June 6, 2001

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U.S. Department of the Interior
Office of the Secretary
Office of Environmental Policy and Compliance
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SUBJECT: RESPONSE TO YOUR JANUARY 17, 2001, COMMENTS REGARDING THE DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT FOR THE RENEWAL OF THE OPERATING LICENSES FOR THE EDWIN I. HATCH NUCLEAR PLANT, UNITS 1 AND 2

Dear Mr. Lee:

I am responding to the subject comments from your January 17, 2001, letter. Your letter raised three issues:

1. The data regarding the entrainment and impingement of aquatic species at the intake structure, upon which the NRC staff relied in the draft supplemental environmental impact statement (SEIS), is dated and was insufficient at the time it was taken to demonstrate the impacts to aquatic species. You recommended that additional studies be undertaken to evaluate these impacts.
2. The data regarding the thermal plume from the plant discharge, upon which the NRC staff relied in the draft SEIS, was insufficient at the time it was taken to demonstrate the impacts to aquatic species. You recommended that additional studies be undertaken to evaluate these impacts.
3. The draft SEIS did not adequately discuss levels of radioactive contamination in the environment caused by plant operations and it did not discuss the radiological impacts to fish and wildlife.

My staff has discussed these issues with Mark Bowers of the U.S. Fish and Wildlife Service (FWS), the contact you designated. In addition, my staff met with Mr. Bowers, a representative of the National Marine Fisheries Service (NMFS), and representatives of the Southern Nuclear Operating Company (SNC, the licensee for the plant) at the Edwin I. Hatch Nuclear Plant (HNP) site on March 22, 2001, to observe first-hand how the site's intake and discharge structures interact with the Altamaha River. Our responses to your comments follow.

Entrainment and Impingement

During the development of the draft SEIS, the NRC staff reviewed the available entrainment and impingement data that was taken by the licensee at the beginning of plant operations (the 316(b) study data). During the meeting on March 22, 2001, the licensee provided additional information from studies that were performed before the 316(b) study and further explained how the data was collected. This additional information was consistent with the 316(b) data, showing that entrainment and impingement at the plant intake should not adversely affect species of concern (most notably the shortnose sturgeon, a Federal-listed endangered species). No shortnose sturgeon were found in the intake structure during the entrainment and impingement studies. The only shortnose sturgeon taken during the studies were caught in drift nets in the river channel. This finding is consistent with what is known about the life history of this species. Note that the plant uses an off-stream cooling system (cooling towers), which means that a minimal amount of water is withdrawn from the river (less than 1 percent of the river flow at normal river elevations).

In addition, the licensee informed us that a key piece of data it had provided in its environmental report (ER) had been stated incorrectly. The ER (Attachment C, page C-52) had listed the normal water velocity through the intake screens as 1.9 feet per second (fps). In reality, this velocity corresponds to an extrapolated low river elevation of 62 feet, with an associated river flow of 900 cubic feet per second (cfs). The velocity through the screens at a nominal river elevation of 71.5 feet would be 0.72 fps and the water velocity approaching the screen would be 0.31 fps. This corrected data also indicates that impingement should not be a problem. The corrected information was provided in writing by the licensee in a letter dated April 25, 2001.

Based on its review, the NRC staff believes that the entrainment and impingement data taken around the time the two units went into operation was adequate to support the conclusion reached at that time that the impacts of the operation of the intake structure on aquatic species would be very small. The staff also considered whether changes in plant operation or the river environment since initial licensing might change that conclusion. The licensed power level for the two units has been increased since initial licensing. However, the amount of water withdrawn from the river did not change appreciably as a result of this change. And although the State of Georgia has experienced severe drought in recent years, the lowest river flow recorded (approximately 1200 cfs) is still greater than the lowest flow (900 cfs) considered by the NRC staff in its final environmental statements (FESs) for HNP (October 1972 and March 1978). Therefore, the staff concludes that the data is sufficient to support the current finding and that additional studies are not warranted.

The staff notes that in the April 25, 2001, letter, SNC volunteered to become involved with the existing Shortnose Sturgeon Recovery Team. This would be similar to its involvement in the recovery efforts for the robust redhorse sucker. In addition, SNC committed to teach the intake screen operators what a shortnose sturgeon looks like so that if one is ever impinged, they will recognize it. At that point, existing licensee procedures require the operators to report the event to the SNC environmental group, who are tasked with informing the cognizant Federal and State agencies.

Thermal Plume

The licensee used a computer model to predict the characteristics of the thermal plume from the plant discharge. The licensee then took actual data on the river on various dates in order to validate the model, as required by the plant's National Pollutant Discharge Elimination System (NPDES) permit. The licensee took data on 12 occasions but only used 5 of the sets of data for purposes of validating the model.

Three sets of data were not used because the plant discharge temperature was not high enough above the river temperature to allow the plume to be detected (i.e., discharge temperature was very close to the river temperature).

In three other cases the data-takers learned after the fact that only one unit's cooling towers were discharging to the river at the time the data was taken. The computer model was not designed to predict the thermal plume under this condition and so the data could not be used. The periodic isolation of blowdown flow from one unit was not an unusual situation in the late 70s and early 80s. At that time whenever the licensee chlorinated the cooling water system (biocide treatment) for one of the plants the discharge to the river from that system was isolated. More recently, the licensee added a dechlorination system for the discharge so that it is not necessary to isolate the blowdown during chlorination.

The remaining set of data was not used because the licensee believed that solar heating of shallow water upstream of the discharge had skewed the results. The licensee based this determination on the fact that the measured temperatures in the river downstream of the discharge were higher than both the river temperature at the intake and the plant discharge temperature.

The NPDES permit, which, among other things, sets limits related to the thermal plume, is issued by the Georgia Department of Natural Resources (GADNR). GADNR was satisfied with the licensee's evaluation of the thermal plume data. In the years since the thermal plume study the permit has been renewed a number of times, most recently in September 1997. The licensee continues to operate HNP in compliance with this permit. Because GADNR is the agency authorized by the U.S. Environmental Protection Agency (EPA) to regulate this activity, the NRC staff is satisfied that the impacts of the thermal plume are being properly managed and remain within the bounds of the FESs. Therefore, the staff concludes that the data is sufficient to support the current finding and that additional studies are not warranted.

Radiological Impacts to Fish and Wildlife

While preparing the draft SEIS, the NRC staff reviewed available data on the amount of activity the plant released to the environment and data on field measurements of contamination beyond the plant boundary. In its discussion of this issue in Section 2.2.7 of the draft SEIS, the staff provided data on the estimated doses to members of the human population caused by plant operations in 1999 (a recent, representative year). The results were small fractions of the limits given in 40 CFR 190.

In Section 4.3 of the draft SEIS the staff briefly discussed its conclusions regarding the radiological impacts of plant operations. This discussion is brief because it relies heavily on the

generic findings on this topic in Section 4.6 of the NRC staff's NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants" (GEIS), May 1996. In the GEIS, the staff concluded that the radiological impacts to people from normal plant operations would be small at all sites. In performing the environmental review for the renewal of the HNP licenses, the staff evaluated whether there was any new and significant information specific to HNP for this issue. Finding none, the staff adopted the conclusion in the GEIS.

With respect to the radiological impacts on fish and wildlife, the NRC staff position is that maintaining doses to the public within the established limits also provides protection to other species. This is consistent with the position expressed by the EPA when it promulgated 40 CFR 190. Specifically, the discussion in support of 40 CFR 190 (see 40 FR 23420) includes the following statement:

Standards developed on this basis [use of a linear non-threshold dose-effect relationship for humans] are believed to also protect the overall ecosystem, since there is no evidence that there is any biological species sensitive enough to warrant a greater level of protection than that adequate for man.

Therefore, the NRC staff has not performed an analysis of the radiological impacts on any species other than humans during its evaluation of the HNP license renewal application.

During the discussion of this issue, Mark Bowers also expressed the concern that giving the estimated doses to humans without providing the associated limits made it difficult to put the doses in context. In response to this comment, the staff has added the dose limits from 40 CFR 190 to Section 2.2.7.

A summary of these responses is included in Appendix A, Part II, of the final SEIS. However, I felt it would also be appropriate to provide you with more detailed responses by letter. If you have any questions, please contact Andy Kugler at (301) 415-2828.

Sincerely,
/RA/
William D. Beckner, Acting Chief
Generic Issues, Environmental, Financial
and Rulemaking Branch
Division of Regulatory Improvement Programs
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Docket Nos. 50-321 and 50-366

cc: See next page

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