

June 20, 1985

Mr. Charles A. Oravetz, Chief
Protected Species Management Branch
National Marine Fisheries Service
Southeast Regional Office
9450 Koger Boulevard
St. Petersburg, Florida 33702

Dear Mr. Oravetz:

In response to your letter of March 15, 1985 and to follow up on discussions with Mr. Paul Raymond of your staff, we are providing additional information on the Vogtle Electric Generating Plant and its potential operational effects on the shortnose sturgeon, a federally-listed endangered species. Our response to your detailed questions on thermal and chemical discharges is provided by enclosure. After this closer look at the potential interaction of discharges from the Vogtle plant and the Savannah River Plant, we find that the additional information provides further support of our assessment given in the March 1985 Final Environmental Statement for the proposed operation of the Vogtle plant and our earlier 1982 review of the Vogtle plant discharge design.

The Vogtle plant discharges into the Savannah River at about River Mile (RM) 151. Assuming low river flow (5800 cfs), the predicted discharge plume for Vogtle has a maximum mixing zone volume (defined by the 2.8°C excess isotherm) of 36.8 cubic meters (1300 ft³). The predicted length along the plume centerline corresponding to this mixing zone volume is 12.8 meters and the plume extends about 10 meters from the Georgia side of the river.

The centerline length of the 1.1°C excess isotherm is predicted to be 30 meters or less under all sets of expected conditions of the discharge flow rate and temperature and extreme ambient river temperatures. The 1.1°C plume extends less than 16 meters into the river from the Georgia side. At the guaranteed low flow of the Savannah River [i.e. 164 cubic meters per second (5800 cfs)], the river is about 104 meters wide at the Vogtle site; thus, the 2.8°C mixing zone affects less than 10% of the river width and the 1.1°C plume affects about 15% of the river width. At higher river flows, the percent width of the river affected by the Vogtle discharge would be less because the river width would be increased and plume extension into the river would be decreased by deflection of the plume back toward the Georgia side of the river.

In all flow conditions, there remains a near-shore zone along the Georgia side of the river which is unaffected by the discharge since the pipe extends out about 6 m from the shoreline under low water conditions. This zone, although narrow, may allow for some near-shore migratory movement by some fish species.

Chemical discharges from the Vogtle plant are regulated by the State NPDES permitting agency with effluent controls established at various points in the plant prior to mixing with other discharges. Plans to use continuous chlorination for biofouling control during the Corbicula spawning period will include dechlorination of discharges to meet the NPDES permit limitations set by the State of Georgia.

Information on the thermal discharges from the Savannah River Plant (SRP) is available in SRP's "Biological Assessment for the Shortnose Sturgeon" issued in October 1983 and in the Department of Energy's impact statement for the L-Reactor operation issued in May 1984. Discharges from the SRP's C and D reactors enter the Savannah River via Beaver Dam Creek and Four Mile Creek. The mouths of Beaver Dam Creek and Four Mile Creek are at River Mile 152.1 and River Mile 150.6. The L-Reactor discharge will enter the Savannah River via Steel Creek, the mouth of which is at River Mile 141.6. According to the "Biological Assessment", the 2.8°C plume from Beaver Dam Creek is confined to the South Carolina shore, extending less than 1/3 of the surface width for a distance of 91 meters downstream. Also, according to the "Biological Assessment", under conditions of extreme low flow (i.e. less than the 7-day, 10-year low flow), the 2.8°C plume from Four Mile Creek may extend 320 meters downstream and cover 43% of the river surface width at a distance of 90 meters below the mouth of Four Mile Creek. More recent unpublished data provided by SRP show that the 2.8°C isotherm has extended to 55% of the river surface width and 31% of the cross-section at a distance of 126 meters downstream of the mouth of Four Mile Creek. The flow of the Savannah River at the time of these observations, in August 1982, was 150 m³/sec. As noted above, the presently guaranteed minimum flow is 164 m³/sec (5800 cfs) so these worst case conditions may not recur. The locations of these thermal discharges provide for free zones of passage for migratory species. It would appear that the SRP thermal discharges are far enough from Vogtle that there is no cumulative blockage effect.

Chemical discharges from the SRP are regulated by the State of South Carolina via the NPDES permit. A copy of the NPDES permit for SRP is enclosed as Attachment 5 to our response for your information. Your

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detailed questions on chemical discharges from the SRP may be more fully addressed by the SRP or the State of South Carolina's NPDES permitting agency.

During our examination of the cumulative effects question, we found that, in July 1983, the Department of Energy started a two-year study to further assess the cumulative impact of the various cooling water withdrawals and thermal discharges of the SRP. Participating in the study are the States of South Carolina and Georgia, the EPA (Region IV), the Fish and Wildlife Service (Region IV) and the Army Corps of Engineers (South Atlantic Division). Your basic question concerning the cumulative effects of the Vogtle plant and SRP discharges can better be addressed when SRP's study is completed. In this regard, we have contacted Mr. Pat Whitfield, DOE's Director of the Environmental Division at SRP, who is available for further discussions. He can be reached on FTS 239-3957. Mr. Whitfield has invited both our agencies to participate with the other agencies in review of their study results for the first year of study; the report is expected to be available in June 1985 and a meeting of the participating agencies is being planned for July 1985.

Upon review of SRP's study results and with the additional information on the Vogtle plant's discharges, your agency can better determine the need, if any, for a formal consultation. At that time, it would be appropriate also for the participating agencies to decide on a "lead agency" under Section 402.04(b)(2) of 50 CFR Part 402, if it is determined by NMFS that additional formal consultation is called for under Section 7 of the Act.

We are available to answer any additional questions concerning the information enclosed. With regard to the invitation by SRP to participate in the review of their study results, we suggest a conference call involving SRP, NRC and your agency to discuss the scope and schedule of participation. The NRC contact for these matters is Ms. Melanie Miller, Licensing Project Manager for the Vogtle review. Ms. Miller can be contacted on FTS 492-4259.

Sincerely,





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
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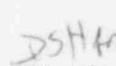
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