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January 29, 1973

Docket No. 50-280

Virginia Electric and Power Company
 ATTN: Mr. Stanley Ragone
 Vice President
 P. O. Box 26666
 Richmond, Virginia 23261

Change No. 5
 License No. DPR-32

Gentlemen:

As part of a review of your nonradiological environmental monitoring program following a visit to the Surry Power Station Unit 1, on October 27, 1972, we have concluded that several changes are necessary for further protection to biota in the James River. Section 4.13 of the Technical Specifications has therefore been revised to provide for record keeping of chemical releases and additional monitoring for the purpose of assessing damage to biota from passage through the station cooling system and entrainment in the thermal plume. In addition, a new Section 4.14 which provides operating limits on thermal releases has been added.

Accordingly, pursuant to Section 50.59 of 10 CFR Part 50, the Technical Specification changes outlined above are hereby required. To effect these changes, add the enclosed pages, TS 4.13-9, TS 4.14-1, TS 4.14-2, and TS 4.14-3, (designated as Change No. 5 on the bottom of each page) to the Technical Specifications of Facility Operating License No. DPR-32.

Sincerely,

Original signed by R. C. DeYoung

R. C. DeYoung, Assistant Director
 for Pressurized Water Reactors
 Directorate of Licensing

Enclosures:
 As stated

cc: George D. Gibson, Esq.
 Hunton, Williams, Gay,
 and Gibson
 P. O. Box 1535
 Richmond, Virginia 23213

bcc: H. Mueller, GMR/H
 J. R. Buchanan, ORNL
 T. W. Laughlin, DTIE
 F. W. Karas, SECY

OFFICE ▶	PWR-1	PWR-1	AD:EP	AD:PWRs	OGC	
SURNAME ▶	ADromerick:mds	GVassallo	DMuller	RCDeYoung	JLee	
DATE ▶	1/29/73	1/29/73	1/29/73	1/29/73	1/30/73	

These Additions Apply to Section 4.13:

On page TS 4.13-3, add item 8 to part A as follows:

8. Records shall be kept of chemical releases to the cooling water system and a summary of this data shall be included in the semi-annual reports described in 4.13 D.

On page TS 4.13-5, add item 5 to part B as follows:

5. Planktonic organisms, such as fish eggs, larvae and invertebrate larvae (both meroplanktonic and holoplanktonic), and post-larval and juvenile fish, or the motile food organisms (such as shrimp) on which these young fish feed, shall be sampled periodically in the intake and discharge canals, at locations within the thermal plume, and in a control area outside the thermal plume. The resulting data shall be analyzed to determine the cooling system passage and entrainment effects of station operation and a summary included in the semi-annual reports described in 4.13 D.

4.14 TEMPERATURE LIMITATIONS ON CONDENSER COOLING WATER DISCHARGE

Applicability

These limitations apply to heat added to the water passing through the turbine steam condensers and to the river by the heated water discharged from the condensers.

Objective

The purpose of this specification is to limit thermal stress to the aquatic ecosystem in the James River from the station's thermal discharge.

Specifications

1. The condenser cooling water discharge temperature shall not exceed 98°F, as measured continuously at the control structure in the discharge canal and without dilution of the water which passes through the condensers.
2. The difference (ΔT) between the river water ambient temperature measured at the station intake and cooling water at the discharge control structure shall not exceed 14°F, except for brief fluctuations during changes in power levels.

3. Normal plant operations shall be controlled such that changes in cooling water temperature at the discharge control structure do not exceed 3°F per hour. This limitation is expected to restrict temperature changes in the river to less than 2°F per hour within a short distance from the discharge control structure.

4. The above limits may be exceeded for brief periods as necessary to meet emergency power requirements of the electrical system, to maintain protection of critical plant equipment and systems, and for certain safeguard operations which cannot be limited or negated by condenser cooling water requirements. These safeguard operations include automatic plant trips and manual plant trips initiated by licensed personnel in emergencies or other situations requiring such actions. Such incidents shall be reported within 24 hours by telegraph or telephone to Region II, Directorate of Regulatory Operations, stating the reasons for such operation, when it began and its completion or expected completion.

Basis

The once-through condenser cooling system is designed to add a maximum of 14°F to river water flowing through the system during full-load operation. Limiting the total temperature of the discharged water to 98°F is expected to restrict the 5°F isotherm to less than half the width of the James River at flows as low as 2000 cfs, as shown in Fig. 3.14

on page 53 of the AEC's Final Environmental Statement issued for Unit 2 in June, 1972. Thus, the fish in this area should be able to avoid temperatures in excess of 90°F, which is approximately the upper lethal temperature for most species. Larval fish and eggs exposed to temperatures above 90°F for 30 minutes or longer as they pass through the condensers, the discharge canal and the thermal plume in the river are likely to suffer significant mortality. However, the 98°F total temperature limit at the discharge control structure should result in restricting damage to biota entrained by the plume to those within a relatively small area offshore from the discharge. This is an important consideration in view of the nursery functions of the James River in the station vicinity.

Observance of these temperature limitations should not restrict operation of the station to less than full power except when ambient river temperatures exceed 84°F. This is not likely to occur except during unusually low river flows and high summer temperatures which are also the ambient conditions when thermal stress to biota is greatest.