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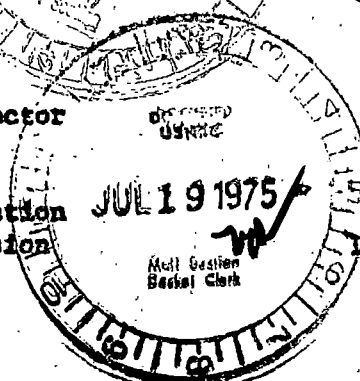
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VIRGINIA ELECTRIC AND POWER COMPANY, RICHMOND, VIRGINIA 23261

July 17, 1975

Mr. K. R. Goller, Assistant Director
for Operating Reactors
Division of Reactor Licensing
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Serial No. 602
LQA/WFB:cel
Docket Nos. 50-280
50-281
License Nos. DPR-32
DPR-37



Dear Mr. Goller:

**AMENDMENT TO OPERATING LICENSES DPR-32 AND DPR-37
TECHNICAL SPECIFICATION CHANGE NO. 31
SURRY POWER STATION UNIT NOS. 1 AND 2**

Pursuant to 10 CFR 50.90, the Virginia Electric and Power Company hereby requests an amendment to the Operating Licenses DPR-32 and DPR-37 for the Surry Power Station, Unit Nos. 1 and 2. The amendment requested is a change to the Technical Specifications. The changes to be made and the basis thereof are enclosed herewith and have been designated as Change No. 31.

While the change requested is restricted to a reformatting of section TS 4.13 for purposes of improved continuity and readability and no changes in technical substance are involved, it is understood, on the basis of discussions between our respective staffs, that non-substantive changes in Technical Specifications, such as this reformatting of section TS 4.13, still require a regular NRC review and approval in the form of a License Amendment. Accordingly, this submission is made.

This proposed Technical Specification Change has been reviewed by both the Station and System Nuclear Safety and Operating Committees. Further it has been determined that the proposed change does not involve a significant hazards consideration or an unreviewed safety question as defined in 10 CFR 50.59.

Very truly yours,

C. M. Stallings

C. M. Stallings
Vice President-Power Supply
and Production Operations

Enclosure

cc: Mr. Norman C. Moseley, Director ✓
Office of Inspection & Enforcement
Region II
U.S. Nuclear Regulatory Commission
230 Peachtree Street, NW
Atlanta, Georgia 30303

7688

(SEAL)

Attest:

D. A. Hillsman

D. A. Hillsman, Jr., Assistant Secretary

COMMONWEALTH OF VIRGINIA)
) S.S.
CITY OF RICHMOND)

Before me, Robert W. Olney, a Notary Public, in and for the City and Commonwealth aforesaid, on this 17th day of July 1975, personally appeared C. M. Stallings and D. A. Hillsman, Jr., who being duly sworn, made oath and said (1) that they are Vice President - Power Supply and Production Operations and Assistant Secretary, respectively, of the Virginia Electric and Power Company, (2) that they are duly authorized to execute and file the foregoing Amendment in behalf of that Company, and (3) that the statements in the Amendment are true to the best of their knowledge and belief.

Given under my hand and notarial seal this 17th day of July, 1975.

My Commission expires August 27, 1978.

Robert W. Olney
Robert W. Olney
Notary Public

(SEAL)

4.13 NONRADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Applicability

The nonradiological environmental monitoring program applies to the monitoring of the temperature-salinity distribution and the biological variables in the 10-mile segment of the James River Estuary centered at Hog Island.

Objective

The objective of the program is to determine (1) the relationship between the thermal discharge and the physical-chemical characteristics of the water mass within the 10-mile tidal segment of the James River; (2) the planktonic, nektonic, and benthic characteristics of this segment; and (3) the effects of the operation of the Surry Power Station on the physical, chemical, and biological variables of the James River Estuary.

Specification

- A. A monitoring program shall be conducted to determine the relationship between the thermal discharge and the physical-chemical characteristics of the water mass within the 10-mile tidal segment centered at Hog Island.
 - 1. The monitoring program shall encompass the segment of the James River Estuary which extends from below the intake of the Surry

Power Station upstream to the southern shore of Jamestown Island as shown on TS Figure 4.13-1.

2. Temperature shall be continuously monitored and recorded at monitoring stations located throughout the estuarine segment approximately as shown in TS Figure 4.13-1. Near-surface and/or bottom temperatures shall be monitored as indicated on TS Figure 4.13-1.
3. The horizontal and vertical salinity structure of the tidal segment shall be determined at monthly intervals as follows: Cruises shall be conducted at slack before flood tide. A four (4) station transect shall be established between the intake structure and Skiffes Creek just before low slack water. Temperature and salinity data shall be collected at two (2) meter intervals from surface to bottom. The cruise shall continue up the channel with same slack stations established at approximately two (2) mile intervals. The second transect shall be made near the upper limits of the segment, the exact location of which shall be based upon the salinity regime of the system. The approximate locations of the sampling stations and the cruise route are shown on TS Figure 4.13-1.
4. Mid-depth temperature and salinity shall be continuously monitored and recorded at the intake of the Surry Power Station.

5. Mid-depth temperature shall be continuously monitored and recorded in the discharge canal.
 6. The freshwater discharge at the Richmond gaging stations shall be recorded as a daily average and the corresponding input for Hog Island calculated.
 7. If chlorine is used in the condenser-cooling system, chlorine demand in the intake canal shall be monitored. The chlorination schedule shall be based on plant operating data rather than on a fixed time basis. During chlorination, chlorine shall be monitored at the end of the discharge groin by use of analytical methods that are sensitive to chlorine at concentrations much less than the concentration required for control and that will differentiate among the various chlorine containing compounds which constitute the residual chlorine. The concentration of residual chlorine at the point of discharge to the James River shall not be greater than 0.1 mg/liter.
 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.
- B. A biological monitoring program that is closely related to the physical and chemical monitoring programs shall be conducted to determine the planktonic, nektonic, and benthic characteristics of the tidal segment

centered at Hog Island and to determine biological changes that occur as a result of the operation of the Surry Power Station.

1. Plankton - Water samples for plankton analyses shall be collected at each of six (6) stations as indicated in TS Figure 4.13-2. Samples shall also be collected in the intake and discharge canals.
 - a. Phytoplankton samples shall be analyzed quantitatively in terms of sample volume to determine both the dominant genera of the community and the chlorophyll "a" content. The samples shall be taken at monthly intervals.
 - b. Zooplankton samples shall be analyzed quantitatively in terms of sample volume to determine generic composition, life history stage and, where possible, species. The sampling interval shall be approximately monthly, taking into consideration life-history information about important species in the area which have planktonic stages in their life histories.
2. Attached Benthic Community - Fouling plates that are 125- by 75-mm asbestos boards shall be suspended 1 m above the bottom at the instrument tower locations shown in TS Figure 4.13-2. Two vertical and two horizontal plates shall be suspended at each indicated location. One of each pair shall be removed and replaced at quarterly intervals; the other pair shall be left in

place for one year before being removed and replaced. The benthic communities attached to the plates shall be analyzed for species composition and diversity.

3. Epibenthos - Replicate benthic grab samples shall be collected at the stations shown in TS Figure 4.13-2. Collection shall be made on a quarterly basis, except during June, July and August when they shall be made monthly. Population characteristics such as species composition, diversity, evenness, redundancy and richness shall be determined. The data shall be analyzed to detect changes in specific components of the epibenthic community including the brackish water clam Rangia cuneata and blue crab Callinectes sapidus.
4. Nekton - The nektonic species of organisms present in the tidal segment shown in TS Figure 4.13-2 shall be qualitatively and quantitatively sampled by seining or trawling at the indicated locations in the estuarine segment. Samples shall be collected at monthly intervals except during periods of active or passive migrations, sampling at three selected station shall be often enough to establish relative population levels. These sampling intervals shall be based on life history distribution information that indicates when species of special interest are likely to be in or passing through this segment of the estuary. The species of special interest shall include Anchovy, Atlantic Menhaden, Blueback Herring, Channel Catfish, Atlantic Croaker, Spot, Striped

Bass, and White Perch. The samples shall be analyzed for species composition, size and life history stages.

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.
- C. The programs described in Specifications A and B shall commence on the day Unit No. 1 is licensed to operate. Where installation of monitoring stations and/or purchase of equipment is necessary and/or involves authorization by other agencies, the affected portion of the program shall be implemented at the earliest practicable time, but not later than December 31, 1972.
 - D. The data obtained from the programs defined in Specifications A and B shall be analyzed as they are collected and shall be compared with model and analytical predictions and with preoperational data. A report of the results of this evaluation shall be forwarded to the Directorate of Licensing (DL) at the end of each six month period or fraction thereof terminating on June 30 and December 31. Such reports are due within 60

days after the end of each reporting period and shall be submitted with the Routine Operating Report described in Technical Specification 6.6. A final report summarizing the results of the program shall be submitted sixty (60) days following the third anniversary of the date Unit No. 2 is licensed to operate. If on the basis of such semi-annual and final reports it is established that no major adverse environmental impact has resulted or is likely to result from continued operation of Unit Nos. 1 and 2 then the program shall be terminated. Otherwise it shall continue until a semiannual report does establish that no impact has resulted or is likely to result. If on the basis of any semiannual report or the final report it is established that the results of the monitoring program are inconclusive, either whole or in part, the licensee shall propose reasonable changes to the program designed to yield conclusive results and implement such changes when they are approved by DL.

- E. Fish killed on the traveling screens at the station or by operating effects of the Surry Power Station shall be identified by species, size, and quantity, and the data shall be recorded in tabular form. These data shall be transmitted to DL semiannually. Significant mortalities of fish that may be related to operation of the station shall be reported to Region II, Directorate of Regulatory Operations within 24 hours. Data concerning significant fish mortalities and the probable cause shall be included in a more detailed report to DL within 10 days.

Basis

Excess temperature distributions and alteration of density flows in the tidal segment have been predicted from data developed from model studies for two-unit operation. Surface isotherms for wind conditions of 5 MPH have been plotted for different stages in the tidal cycle. The data collected under Specification A will permit an evaluation of the predictions and provide the basis for describing the parameters which may have environmental significance. The surface and bottom records combined with profile data will also permit cross-sectional as well as longitudinal physical-chemical evaluations to be made of the tidal segment.

The tidal segment encompassing the Surry site is in the vicinity of the mean transition zone between fresh and saltwater. During periods when the fresh-water inflow, as measured at the head of the coastal physiographic province exceeds approximately 12,000 cfs for an extended period, the water in the reach is fresh. At lower flows, the water becomes brackish and during extreme drought conditions the salinity on the discharge side of the point may reach 11 ppt. Since it is not feasible to take direct measurements of fresh water inflow, calculational methods will be used to predict the flow from data which is available at gaging stations.

The condenser is cleaned by a mechanical system and it is expected that it will not be necessary to use chlorine to maintain condenser cleanliness. In the remote event it becomes necessary to utilize chlorine, its use will be regulated by need as demonstrated by a change in operating parameters. Re-

sidual chlorine will be monitored at the point of discharge to the James River and shall not exceed 0.1 mg/liter. This concentration should have no effect on river organisms.

The post-operational non-radiological monitoring program is designed to evaluate biological populations in which the species and number of individuals present at a given time is influenced by:

1. Seasonal and natural distribution patterns
2. Salinity as influenced by freshwater inflow
3. Ecological "salinity gradient zone" characteristics
4. Geological "turbidity maximum" zone influence.

The high level of natural statistical associated variation characteristics of samples collected from the segment influence the confidence limits that can be assigned to population parameters.

The nonradiological environmental monitoring will maximize effort in these areas most likely to measure the effects of station operation on the tidal segment.

The data collected under this program will be discussed with the appropriate State and Federal Agencies having regulatory authority in the area.