

January 27, 1978

Dockets Nos.: 50-280 ✓
and 50-281

Virginia Electric & Power Company
ATTN: Mr. W. L. Proffitt
Senior Vice President - Power
P. O. Box 26666
Richmond, Virginia 23261

Gentlemen:

The Commission has issued the enclosed Amendments Nos. 36 and 35 to Facility Operating Licenses Nos. DPR-32 and DPR-37 for the Surry Power Station, Units Nos. 1 and 2, respectively. These amendments consist of changes to the Technical Specifications in response to your application dated December 20, 1977.

These amendments: (1) revise the reporting requirements to allow the use of Monthly Operating Report formats; (2) delete the requirement for an Annual Operating Report while retaining the requirement that occupational exposure data be reported on an annual basis; and (3) change the frequency from semiannual to annual for submittal of a Nonradiological Environmental Monitoring Report.

Copies of the Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Enclosures:

1. Amendment No. 36 to DPR-32
2. Amendment No. 35 to DPR-37
3. Safety Evaluation
4. Notice

cc w/enclosures: See next page

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SURNAME →	RIngram	MFairtile:rm	RARMAN	RReid	TJCarter	
DATE →	1/27/78	1/25/78	1/25/78	1/27/78	1/25/78	

Virginia Electric & Power Company

cc w/enclosure(s):

Michael W. Maupin, Esquire
Hunton, Williams, Gay & Gibson,
P. O. Box 1535
Richmond, Virginia 23213

Mr. Sherlock Holmes, Chairman
Board of Supervisors of Surry County
Surry County Courthouse
Surry, Virginia 23683

Mr. James C. Dunstan
State Corporation Commission
Commonwealth of Virginia
Blandon Building
Richmond, Virginia 23209

Chief, Energy Systems Analyses
Branch (AN-459)
Office of Radiation Programs
U. S. Environmental Protection Agency
Room 645, East Tower
401 M Street, S.W.
Washington, D. C. 20460

U. S. Environmental Protection Agency
Region III Office
ATTN: EIS COORDINATOR
Curtis Building (Sixth Floor)
6th and Walnut Streets
Philadelphia, Pennsylvania 19106

Swem Library
College of William & Mary
Williamsburg, Virginia 23185

cc w/enclosure(s) and incoming
dtd: 12/20/77
Commonwealth of Virginia
Council on the Environment
903 9th Street Office Building
Richmond, Virginia 23219



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

VIRGINIA ELECTRIC & POWER COMPANY

DOCKET NO. 50-280

SURRY POWER STATION UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 36
License No. DPR-32

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Virginia Electric & Power Company (the licensee) dated December 20, 1977, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public;
and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

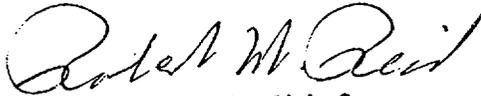
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR- 32 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 36, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: January 27, 1978

ATTACHMENT TO LICENSE AMENDMENT NO. 36

FACILITY OPERATING LICENSE NO. DPR-32

DOCKET NO. 50-280

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change. Pages 4.13-1, 4.13-2, 4.13-4, 4.13-7, and 4.13-8 are unchanged and are included for convenience only.

Pages

4.13-1 thru 4.13-8

4.14-3

6.6-2 thru 6.6-4

6.6-17

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.

CHANGE 2 dtd 9/28/72

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 reported as 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 that during periods of active or passive migrations, sampling at three selected stations 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 reported as 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 Nuclear Regulatory Commission. Such reports are due within 60 days after the end of each reporting period and shall be submitted with the Annual 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 annual and final reports it is established that no major adverse environmental impact has resulted or is likely to result from continued operation of Units Nos. 1 and 2 then the program may be terminated upon NRC approval. Otherwise it shall continue until an annual report does establish that no impact has resulted or is likely to result. If on the basis of any annual 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 NRC.

- 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 NRC annually. Significant mortalities of fish that may be related to operation of the station shall be reported to Region II, Office of Inspection and Enforcement, within 24 hours. Data concerning significant fish mortalities and the probable cause shall be included in a more detailed report to NRC 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 freshwater 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. Residual 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.

- C. 1. In all instances where thermal discharge limits stated in Specification 4.14.A are exceeded, except as allowed under 4.14.B, these shall be reported as follows: (1) to the Director, Region II, Office of Inspection and Enforcement, via telephone or telegraph within 24 hours of the time of occurrence; and (2) to the Director, Division of Operating Reactors, by letter within 15 days, stating the reason or reasons such limits were exceeded, when the incident occurred, its duration, any evidence of adverse environmental impact, and what actions are being taken to prevent recurrence.
2. In all instances where thermal discharge limits are exceeded, including those allowed under 4.14.B, appropriate notations shall be included in the Monthly Operating Report.

In addition, if there is evidence of significant adverse environmental impact, such as fish killed in the James River, from exceeding the thermal discharge limits as allowed under 4.14.B, this shall be reported to the Director, Region II, Office of Inspection and Enforcement, by telephone or telegraph within 24 hours.

(2) 90 days following resumption or commencement of commercial power operation, or (3) 9 months following initial criticality, whichever is earliest. If the Startup Report does not cover all three events (i.e., initial criticality, completion of startup test program, and resumption or commencement of commercial power operation); supplementary reports shall be submitted at least every three months until all three events have been completed.

b. Annual Operating Report.^{1/}

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- (1) A tabulation on an annual basis of the number of station, utility and other personnel (including contractors) receiving exposures greater than 100 mrem/yr and their associated man rem exposure according to work and job functions, ^{2/1} e.g., reactor operations and surveillance, insert inspection, routine maintenance, special maintenance (describe maintenance), waste processing, and refueling. The dose assignment to various duty functions may be estimates based on pocket dosimeter, TLD, or film badge measurements. Small exposures totalling less than 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole body dose received from external sources shall be assigned to specific major work functions.

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- c. Monthly Operating Report. Routine reports of operating statistics and the Narrative Summary of Operating Experience (operation and major safety-related maintenance) shall be submitted on a monthly basis to the Office of Management Information and Program Control, U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, with a copy to the appropriate Region Office, to arrive no later than the fifteenth of each month following the calendar

FOOTNOTES

1. A single submittal may be made for a multiple unit station. The submittal should combine those sections that are common to all units at the station.

2. This tabulation supplements the requirements of §20.407 of 10 CFR Part 20.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

VIRGINIA ELECTRIC & POWER COMPANY

DOCKET NO. 50-281

SURRY POWER STATION UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 35
License No. DPR-37

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Virginia Electric & Power Company (the licensee) dated December 20, 1977, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public;
and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-37 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 35, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: January 27, 1978

ATTACHMENT TO LICENSE AMENDMENT NO. 35

FACILITY OPERATING LICENSE NO. DPR-37

DOCKET NO. 50-281

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change. Pages 4.13-1, 4.13-2, 4.13-4, 4.13-7, and 4.13-8 are unchanged and are included for convenience only.

Pages

4.13-1 thru 4.13-8

4.14-3

6.6-2 thru 6.6-4

6.6-17

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.

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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 reported as 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 that during periods of active or passive migrations, sampling at three selected stations 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 reported as 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 Nuclear Regulatory Commission. Such reports are due within 60 days after the end of each reporting period and shall be submitted with the Annual 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 annual and final reports it is established that no major adverse environmental impact has resulted or is likely to result from continued operation of Units Nos. 1 and 2 then the program may be terminated upon NRC approval. Otherwise it shall continue until an annual report does establish that no impact has resulted or is likely to result. If on the basis of any annual 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 NRC.

- 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 NRC annually. Significant mortalities of fish that may be related to operation of the station shall be reported to Region II, Office of Inspection and Enforcement, within 24 hours. Data concerning significant fish mortalities and the probable cause shall be included in a more detailed report to NRC 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 freshwater 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. Residual 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.

- C. 1. In all instances where thermal discharge limits stated in Specification 4.14.A are exceeded, except as allowed under 4.14.B, these shall be reported as follows: (1) to the Director, Region II, Office of Inspection and Enforcement, via telephone or telegraph within 24 hours of the time of occurrence; and (2) to the Director, Division of Operating Reactors, by letter within 15 days, stating the reason or reasons such limits were exceeded, when the incident occurred, its duration, any evidence of adverse environmental impact, and what actions are being taken to prevent recurrence.
2. In all instances where thermal discharge limits are exceeded, including those allowed under 4.14.B, appropriate notations shall be included in the Monthly Operating Report.

In addition, if there is evidence of significant adverse environmental impact, such as fish killed in the James River, from exceeding the thermal discharge limits as allowed under 4.14.B, this shall be reported to the Director, Region II, Office of Inspection and Enforcement, by telephone or telegraph within 24 hours.

(2) 90 days following resumption or commencement of commercial power operation, or (3) 9 months following initial criticality, whichever is earliest. If the Startup Report does not cover all three events (i.e., initial criticality, completion of startup test program, and resumption or commencement of commercial power operation), supplementary reports shall be submitted at least every three months until all three events have been completed.

b. Annual Operating Report^{1/}

DELETED

DELETED

- (1) A tabulation on an annual basis of the number of station, utility and other personnel (including contractors) receiving exposures greater than 100 mrem/yr and their associated man rem exposure according to work and job functions,²¹ e.g., reactor operations and surveillance, in-service inspection, routine maintenance; special maintenance (describe maintenance), waste processing, and refueling. The dose assignment to various duty functions may be estimates based on pocket dosimeter, TLD, or film badge measurements. Small exposures totalling less than 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole body dose received from external sources shall be assigned to specific major work functions.

DELETED

- c. Monthly Operating Report. Routine reports of operating statistics and the Narrative Summary of Operating Experience (operation and major safety-related maintenance) shall be submitted on a monthly basis to the Office of Management Information and Program Control, U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, with a copy to the appropriate Region Office, to arrive no later than the fifteenth of each month following the calendar

FOOTNOTES

1. A single submittal may be made for a multiple unit station. The submittal should combine those sections that are common to all units at the station.

2. This tabulation supplements the requirements of §20.407 of 10 CFR Part 20.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENTS NOS. 36 AND 35 TO

FACILITY OPERATING LICENSES NOS. DPR-32 AND DPR-37

VIRGINIA ELECTRIC AND POWER COMPANY

SURRY POWER STATION UNITS NOS. 1 AND 2

DOCKETS NOS. 50-280 AND 50-281

Introduction

Regulatory Guide 1.16, "Reporting of Operating Information - Appendix A Technical Specifications," is the basis for reporting requirements found in Technical Specifications today. When these Technical Specifications were issued we requested that licensees use the formats in the guide for the Licensee Event Report (LER) and Monthly Operating Report. After two years of experience with the reporting requirements identified in this guide we reviewed the scope of information licensees are required to submit in the LER, Annual Operating Report, Monthly Operating Report and Startup Report.

Based on our review of LER's, we developed a modified format for the LER to make this document more useful for evaluation purposes. By letters sent in July and August 1977, we informed licensees of the new LER format and requested that they use it.

From our review of all licensee reports, we determined that much of the information found in the Annual Operating Report either is addressed in the LER's or Monthly Operating Reports, which are submitted in a more timely manner, or could be included in these reports with only a slight augmentation of the information already supplied. Therefore, we concluded that the Annual Operating Report could be deleted as a Technical Specification requirement if certain additional information were provided in the Monthly Operating Reports. As a result we sent letters during September 1977 to licensees informing them that a revised and improved format for Monthly Operating Reports was available and requested that they use it. In addition, licensees were informed that if they agreed to use the revised format they should submit a change request to delete the requirement for an Annual Operating Report except that occupational exposure data must still be submitted.

By letter dated December 20, 1977, Virginia Electric and Power Company (licensee) proposed amendments to the Surry Station operating licenses. These amendments would: (1) revise the Technical Specifications to delete the requirement for an Annual Operating Report; (2) modify the content of the Monthly Operating Reports; and (3) change the frequency from semiannual to annual for submittal of a Nonradiological Environmental Monitoring Report.

Evaluation

This change provides wording in the Technical Specifications which identifies the required reports, states the circumstances under which they should be submitted and details the timing of such submittals. The proposed change provides greater flexibility to accommodate changes to the reporting system and allows the licensee to use the recently revised Monthly Operating Report formats and is therefore acceptable.

The licensee has also proposed to delete all but one of the four specified items in the Annual Operating Report. The report which tabulates occupational exposure on an annual basis is needed and therefore, the requirement to submit this information has been retained. We have determined that the failed fuel examination information does not need to be supplied routinely by licensees because this type of historical data can be obtained in a compiled form from fuel vendors when needed. The information concerning forced reductions in power and outages will be supplied in the revised Monthly Operating Reports and the narrative summary of operating experience will be provided on a monthly basis in the Monthly Operating Report rather than annually. The licensee has committed to use the revised Monthly Operating Report format beginning with their report for January 1978 as requested. We have concluded that all needed information will be provided and deletion of the Annual Operating Report is acceptable.

In Technical Specification 4.13, "Nonradiological Environmental Monitoring Program" the licensee has proposed to change the frequency of reporting the required data from semiannual to annual. The change in reporting frequency is consistent with Regulatory Guide 4.8, "Environmental Technical Specifications for Nuclear Power Plants," and is acceptable.

Environmental Consideration

We have determined that these amendments do not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendments involve an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendments do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the amendments do not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Dated: January 27, 1978

UNITED STATES NUCLEAR REGULATORY COMMISSIONDOCKETS NOS. 50-280 AND 50-281VIRGINIA ELECTRIC AND POWER COMPANYNOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY
OPERATING LICENSES

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendments Nos. 36 and 35 to Facility Operating Licenses Nos. DPR-32 and DPR-37, issued to Virginia Electric and Power Company (the licensee), which revised Technical Specifications for operation of the Surry Power Station, Units Nos. 1 and 2 (the facilities) located in Surry County, Virginia. The amendments are effective as of the date of issuance.

The amendments: (1) revise the reporting requirements to allow the use of Monthly Operating Report formats; (2) delete the requirement for an Annual Operating Report while retaining the requirement that occupational exposure data be reported on an annual basis; and (3) change the frequency from semiannual to annual for submittal of a Nonradiological Environmental Monitoring Report.

The application for the amendments complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendments. Prior public notice of these amendments was not required since the amendments do not involve a significant hazards consideration.

- 2 -

The Commission has determined that the issuance of these amendments will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of these amendments.

For further details with respect to this action, see (1) the application for amendments dated December 20, 1977, (2) Amendments Nos. 36 and 35 to Licenses Nos. DPR-32 and DPR-37, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C. and at the Swem Library, College of William and Mary, Williamsburg, Virginia. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 27th day of January 1978.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors