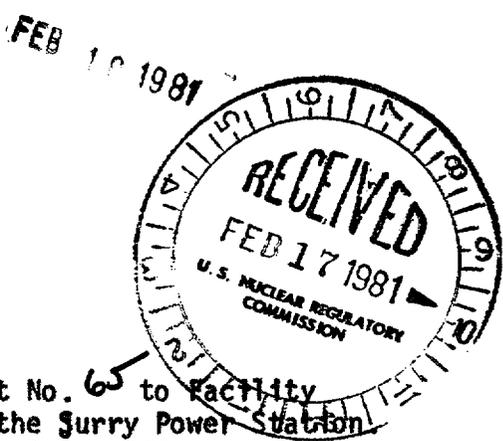


paper

Docket No. 50-280

Mr. J. H. Ferguson
Executive Vice President - Power
Virginia Electric and Power Company
Post Office Box 26666
Richmond, Virginia 23261



Dear Mr. Ferguson:

The Commission has issued the enclosed Amendment No. ⁶⁵ to Facility Operating License No. DPR-32 for Unit No. 1 of the Jurry Power Station. The amendment consists of changes to the Technical Specifications in response to your application transmitted by letter dated December 30, 1976, as supplemented May 24, 1979.

The amendment incorporates steam generator inservice inspection requirements and reactor coolant and secondary coolant iodine radioactivity concentration limits into the Technical Specifications and deletes a license condition that previously governed steam generator inspections. This amendment is identical to the one issued for Unit 2 on December 20, 1979 and the Safety Evaluation Report for that amendment applied to Unit 1 also.

These changes have been made to provide inservice inspection requirements suitable for essentially new steam generators in accordance with Regulatory Guide 1.83. Previous requirements were tailored to deteriorating steam generator tubes which were removed as a part of the steam generator repair program approved on January 19, 1979 and implemented on September 14, 1980.

We have determined that the amendment does 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 amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.50(b)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be

Previous concurrence. see next page

OFFICE							
SURNAME							
DATE	8103040229						

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 this amendment will not be inimical to the common defense and security or to the health and safety of the public.

A copy of the Notice of Issuance is enclosed.

Sincerely,

Original signed by:

S. A. Varga

Steven. A. Varga, Chief
Operating Reactors Branch #1
Division of Licensing

Enclosures:

1. Amendment No. to DPR-32
2. Notice of Issuance

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See next page

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issuance of the notice
+ the amendment.
SER not reviewed*

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Docket No. 50-280

Mr. J. H. Ferguson
Executive Vice President - Power
Virginia Electric and Power Company
Post Office Box 26666
Richmond, Virginia 23261

Dear Mr. Ferguson:

The Commission has issued the enclosed Amendment No. to Facility Operating License No. DPR-32 for Unit No. 1 of the Surry Power Station. The amendment consists of changes to the Technical Specifications in response to your application transmitted by letter dated December 30, 1976, as supplemented May 24, 1979.

The amendment incorporates steam generator inservice inspection requirements and reactor coolant and secondary coolant iodine radioactivity concentration limits into the Technical Specifications and deletes a license condition that previously governed steam generator inspections. This amendment is identical to the one issued for Unit 2 on December 20, 1979 and the Safety Evaluation Report for that amendment applied to Unit 1 also.

These changes have been made to provide inservice inspection requirements suitable for essentially new steam generators in accordance with Regulatory Guide 1.83. Previous requirements were tailored to deteriorating steam generator tubes which were removed as a part of the steam generator repair program approved on January 19, 1979 and implemented on September 14, 1980.

A copy of the Notice of Issuance is enclosed.

Sincerely,

Steven A. Varga, Chief
Operating Reactors Branch #1
Division of Licensing

- Enclosures:
1. Amendment No. ⁶⁵ to DPR-32
 2. Notice of Issuance

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no legal objections*

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SURNAME	C.Parrish	D.Neighbors:ms	S.A.Varga	T.Novak	L.ewerty		
DATE	1/8/81	1/8/81	1/10/81	1/13/81	1/21/81		

Docket



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

February 10, 1981

Docket No. 50-280

Mr. J. H. Ferguson
Executive Vice President - Power
Virginia Electric and Power Company
Post Office Box 26666
Richmond, Virginia 23261

Dear Mr. Ferguson:

The Commission has issued the enclosed Amendment No. 65 to Facility Operating License No. DPR-32 for Unit No. 1 of the Surry Power Station. The amendment consists of changes to the Technical Specifications in response to your application transmitted by letter dated December 30, 1976, as supplemented May 24, 1979.

The amendment incorporates steam generator inservice inspection requirements and reactor coolant and secondary coolant iodine radioactivity concentration limits into the Technical Specifications and deletes a license condition that previously governed steam generator inspections. This amendment is identical to the one issued for Unit 2 on December 20, 1979 and the Safety Evaluation Report for that amendment applied to Unit 1 also.

These changes have been made to provide inservice inspection requirements suitable for essentially new steam generators in accordance with Regulatory Guide 1.83. Previous requirements were tailored to deteriorating steam generator tubes which were removed as a part of the steam generator repair program approved on January 19, 1979 and implemented on September 14, 1980.

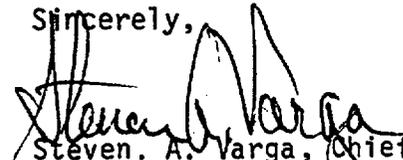
We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant 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 this amendment.

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does 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 this amendment will not be inimical to the common defense and security or to the health and safety of the public.

A copy of the Notice of Issuance is enclosed.

Sincerely,


Steven A. Varga, Chief
Operating Reactors Branch #1
Division of Licensing

Enclosures:

1. Amendment No. 65 to DPR-32
2. Notice of Issuance

cc: w/encls:
See next page

Mr. J. H. Ferguson
Virginia Electric and Power Company

cc: Mr. Michael W. Maupin
Hunton and Williams
Post Office Box 1535
Richmond, Virginia 23213

Mr. J. L. Wilson, Manager
P. O. Box 315
Surry, Virginia 23883

Swem Library
College of William and Mary
Williamsburg, Virginia 23185

Donald J. Burke, Resident Inspector
Surry Power Station
U. S. Nuclear Regulatory Commission
Post Office Box 166
Route 1
Surry, Virginia 23883

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

Commonwealth of Virginia
Council on the Environment
903 Ninth Street Office Building
Richmond, Virginia 23219

Attorney General
1101 East Broad Street
Richmond, Virginia 23219

Mr. James R. Wittine
Commonwealth of Virginia
State Corporation Commission
Post Office Box 1197
Richmond, Virginia 23209

Director, Criteria and Standards Division
Office of Radiation Programs (ANR-460)
U. S. Environmental Protection Agency
Washington, D. C. 20460

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



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

VIRGINIA ELECTRIC AND POWER COMPANY

DOCKET NO. 50-280

SURRY POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 65
License No. DPR-32

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Virginia Electric and Power Company (the licensee) dated December 30, 1976 as supplemented May 24, 1979, 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 deleting paragraph E Steam Generator Inspection and by changes to the Technical Specifications as indicated in the attachment to the license amendment, and paragraph 3.B of Facility Operating License No. DPR-32 is amended to read as follows:

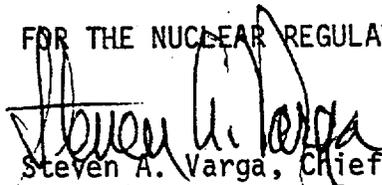
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B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 65, 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 its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Steven A. Varga, Chief
Operating Reactors Branch #1
Division of Licensing

Attachment:
Changes to the
Technical Specifications

Date of Issuance: February 10, 1981

ATTACHMENT TO LICENSE AMENDMENT NO. 65

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.

Remove

ii
3.1-15
3.1-17
3.6-2
3.6-5
4.1-10

Insert

ii
3.1-13a
3.1-15
3.1-15a
3.1-17
3.1-17a
3.6-2
3.6-5
4.1-10
4.1-10a
4.19-1
4.19-2
4.19-3
4.19-4
4.19-5
4.19-6
4.19-7
4.19-8
4.19-9
4.19-10
4.19-11
4.19-12

Appendix A-1

<u>Section</u>	<u>Title</u>	<u>Page</u>
3.15	Containment Vacuum System	TS 3.15-1
3.16	Emergency Power System	TS 3.16-1
3.17	Loop Stop Valve Operation	TS 3.17-1
3.18	Movable Incore Instrumentation	TS 3.18-1
3.19	Main Control Room Ventilation System	TS 3.19-1
3.20	Shock Suppressors (Snubbers)	TS 3.20-1
3.21	Fire Detection and Suppression System	TS 3.21-1
4.0	<u>SURVEILLANCE REQUIREMENTS</u>	TS 4.0-1
4.1	Operational Safety Review	TS 4.1-1
4.2	Reactor Coolant System Component Tests	TS 4.2-1
4.3	Reactor Coolant System Integrity Testing Following Opening	TS 4.3-1
4.4	Containment Tests	TS 4.4-1
4.5	Spray Systems Tests	TS 4.5-1
4.6	Emergency Power System Periodic Testing	TS 4.6-1
4.7	Auxiliary Feedwater System	TS 4.8-1
4.9	Effluent Sampling and Radiation Monitoring System	TS 4.9-1
4.10	Safety Injection System Tests	TS 4.11-1
4.12	Ventilation Filter Tests	TS 4.12-1
4.13	Nonradiological Environmental Monitoring Program	TS 4.13-1
4.15	Augmented Inservice Inspection Program for High Energy Lines Outside of Containment	TS 4.15-1
4.16	Leakage Testing of Miscellaneous Radioactive Materials	TS 4.16-1
4.17	Shock Suppressors (Snubbers)	TS 4.17-1
4.18	Fire Detection and Protection System Surveillance	TS 4.18-1
4.19	Steam Generator Inservice Inspection	TS 4.19-1

6. If the primary-to-secondary leakage through all steam generators not isolated from the Reactor Coolant System exceeds 1 gpm total and 500 gallons per day through any one steam generator not isolated from the Reactor Coolant System, reduce the leakage rate to within limits within 4 hours or be in hot shutdown within the next 6 hours and in cold shutdown within the following 30 hours.

system leakage. Radiation monitors which indicate primary system leakage include the containment air particulate and gas monitors, the condenser air ejector monitor, the component cooling water monitor, and the steam generator blowdown monitor.

References

FSAR, Section 4.2.7 - Reactor Coolant System Leakage

FSAR, Section 14.3.2 - Rupture of a Main Steam Pipe

D. Maximum Reactor Coolant Activity

Specifications

1. The total specific activity of the reactor coolant due to nuclides with half-lives of more than 15 minutes shall not exceed $100/\bar{E}$ $\mu\text{Ci/cc}$ whenever the reactor is critical or the average temperature is greater than 500°F , where \bar{E} is the average sum of the beta and gamma energies, in Mev, per disintegration. If this limit is not satisfied, the reactor shall be shut down and cooled to 500°F or less within 6 hours after detection. Should this limit be exceeded by 25%, the reactor shall be made sub-critical and cooled to 500°F or less within 2 hours after detection.

2. The specific activity of the reactor coolant shall be limited to ≤ 1.0 $\mu\text{Ci}/\text{cc}$ DOSE EQUIVALENT I-131 whenever the reactor is critical or the average temperature is greater than 500°F .
3. The requirements of D-2 above may be modified to allow the specific activity of the reactor coolant >1.0 $\mu\text{Ci}/\text{cc}$ DOSE EQUIVALENT I-131 but less than 10.0 $\mu\text{Ci}/\text{cc}$ DOSE EQUIVALENT I-131, operation may continue for up to 48 hours provided that operation under these circumstances shall not exceed 10 percent of the unit's total yearly operating time. With the specific activity of the reactor coolant >1.0 $\mu\text{Ci}/\text{cc}$ DOSE EQUIVALENT I-131 for more than 48 hours during one continuous time interval or exceeding 10.0 $\mu\text{Ci}/\text{cc}$ DOSE EQUIVALENT I-131, the reactor shall be shut down and cooled to 500°F or less within 6 hours after detection.
4. If the specific activity of the reactor coolant exceeds 1.0 $\mu\text{Ci}/\text{cc}$ DOSE EQUIVALENT I-131 or $100/\bar{E}$ $\mu\text{Ci}/\text{cc}$, a report shall be prepared and submitted to the Commission pursuant to Specification 6.6.2.b(2). This report shall contain the results of the specific activity analysis together with the following information:
 - a. Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded,
 - b. Fuel burnup by core region,
 - c. Clean-up flow history starting 48 hours prior to the first sample in which the limit was exceeded,
 - d. History of degassing operations, if any, starting 48 hours prior to the first sample in which the limit was exceeded, and
 - e. The time duration when the specific activity of the primary coolant exceeded 1.0 $\mu\text{Ci}/\text{cc}$ DOSE EQUIVALENT I-131.

boundary would be 0.30 Rem whole body and 0.28 Rem thyroid. Thus, these doses are well below the guidelines suggested in 10CFR100.

Permitting reactor operation to continue for limited time periods with the reactor coolant's specific activity $>1.0 \mu\text{Ci/cc}$ but $< 10.0 \mu\text{Ci/cc}$ DOSE EQUIVALENT I-131 accommodates possible iodine spiking phenomenon which may occur following changes in thermal power. Operation within these limits must be restricted to no more than 10 percent of the unit's yearly operating time since the activity levels allowed may slightly increase the 2 hour thyroid dose at the site boundary following a postulated steam generator tube rupture. The basis for the 500°F temperature contained in the Specification is that the saturation pressure corresponding to 500°F , 680.8 psia, is well below the pressure at which the atmospheric relief valves on the secondary side could be actuated.

Measurement of \bar{E} will be performed at least twice annually. Calculations required to determine \bar{E} will consist of the following:

1. \bar{E} shall be the average (weighed in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling) of the sum of the average beta and gamma energies per disintegration (in MeV) for isotopes, other than iodines, with half lives greater than 15 minutes, making up at least 95% of the total non-iodine activity in the coolant.
2. A determination of the beta and gamma decay energy per disintegration of each nuclide determined in (1) above by applying known decay energies and schemes.
3. A calculation of \bar{E} by appropriate weighing of each nuclide's beta and gamma energy with its concentration as determined in (1) above.

DOSE EQUIVALENT I-131 shall be that concentration of I-131 ($\mu\text{Ci/cc}$) which alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134 and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in Table III of TID-14844, "Calculation of Distance Factors for Power and Test Reactor Sites".

E. Minimum Temperature for Criticality

Specifications

2. A minimum of 96,000 gal of water shall be available in the tornado missile protected condensate storage tank to supply emergency water to the auxiliary feedwater pump suction.
 3. All main steam line code safety valves, associated with steam generators in unisolated reactor coolant loops, shall be operable.
 4. System piping and valves required for the operation of the components enumerated in Specification B.1, 2, and 3 shall be operable.
- C. The iodine - 131 activity in the secondary side of any steam generator, in an unisolated reactor coolant loop, shall not exceed 9 curies. Also the specific activity of the secondary coolant system shall be $\leq 0.10 \mu\text{Ci/cc}$ DOSE EQUIVALENT I-131. If the specific activity of the secondary coolant system exceeds $0.10 \mu\text{Ci/cc}$ DOSE EQUIVALENT I-131, the reactor shall be shut down and cooled to 500°F or less within 6 hours after detection and in the Cold Shutdown Condition within the following 30 hours.
- D. The requirements of Specification B-2 above may be modified to allow utilization of protected condensate storage tank water with the auxiliary steam generator feed pumps provided the water level is maintained above 60,000 gallons, sufficient replenishment water is available in the 300,000 gallon condensate storage tank, and replenishment of the protected condensate storage tank is commenced within two hours after the cessation of protected condensate storage tank water consumption.

BASIS

A reactor which has been shutdown from power requires removal of core residual heat. While reactor coolant temperature or pressure is greater than 350°F or

The steam generator's specific iodine - 131 activity limit is calculated by dividing the total activity limit of 9 curies by the water volume of a steam generator. At full power, with a steam generator water volume of 47.6 M³, the specific iodine - 131 limit would be .18 µCi/cc; at zero power, with a steam generator water volume of 101 M³, the specific iodine - 131 limit would be .089 µCi/cc

The limitations on secondary system specific activity ensure that the resultant off-site radiation dose will be limited to a small fraction of 10CFR Part 100 limits in the event of a steam line rupture.

References

FSAR Section 4	Reactor Coolant System
FSAR Section 9.3	Residual Heat Removal System
FSAR Section 10.3.1	Main Steam System
FSAR Section 10.3.2	Auxiliary Steam System
FSAR Section 10.3.5	Auxiliary Feedwater Pumps
FSAR Section 10.3.8	Vent and Drain Systems
FSAR Section 14.3.2.5	Environmental Effects of a Steam Line Break

MINIMUM FREQUENCIES FOR SAMPLING TESTS

<u>DESCRIPTION</u>	<u>TEST</u>	<u>FREQUENCY</u>	<u>FSAR SECTION REFERENCE</u>
1. Reactor Coolant Liquid Samples	Radio-chemical Analysis (1)	Monthly (5)	
	Gross Activity (2)	5 days/week (5)	9.1
	Tritium Activity	Weekly (5)	9.1
	*Chemistry (Cl, F & O ₂)	5 days/week	4
	*Boron Concentration	Twice/week	9.1
	E Determination	Semiannually (3)	
	DOSE EQUIVALENT I-131	Once/2 weeks (5)	
	Radio-iodine Analysis (including I-131, I-133 & I-135)	Once/4 hours (6) and (7) below	
2. Refueling Water Storage Tank Water Sample	Boron Concentration	Weekly	6
3. Boric Acid Tanks	*Boron Concentration	Twice/week	9.1
4. Boron Injection Tank	Boron Concentration	Twice/week	6
5. Chemical Additive Tank	NaOH Concentration	Monthly	6
6. Spent Fuel Pit	*Boron Concentration	Monthly	9.5
7. Secondary Coolant	Fifteen minute degassed β and γ activity (4)	Once/72 hours	10.3
	DOSE EQUIVALENT I-131	Monthly (4) Semiannually (8)	
8. Stack Gas Iodine and Particulate Samples	*I-131 and particulate radioactive releases	Weekly	
9. Accumulator	Boron Concentration	Monthly	6.2

*See Specification 4.1.D

(1) A radiochemical analysis will be made to evaluate the following corrosion products: Cr-51, Fe-59, Mn-54, Co-58, and Co-60.

(2) A gross beta-gamma degassed activity analysis shall consist of the quantitative measurement of the total radioactivity of the primary coolant in units of $\mu\text{Ci/cc}$.

- (3) \bar{E} determination will be started when the gross gamma degassed activity of radionuclides with half-lives greater than 15 minutes analysis indicates $\geq 10\mu\text{Ci/cc}$. Routine sample(s) for \bar{E} analyses shall only be taken after a minimum of 2 EFPD and 20 days of power operation have elapsed since reactor was last subcritical for 48 hours or longer.
- (4) If the fifteen minute degassed beta and gamma activity is 10% or more of the 9 Curie limit given in Specification 3.6.C, a DOSE EQUIVALENT I-131 analysis will be performed.
- (5) When reactor is critical and average primary coolant temperature $\geq 350^\circ\text{F}$.
- (6) Whenever the specific activity exceeds $1.0 \mu\text{Ci/cc}$ DOSE EQUIVALENT I-131 or $100/\bar{E} \mu\text{Ci/cc}$ and until the specific activity of the reactor coolant system is restored within its limits.
- (7) One sample between 2 & 6 hours following a thermal power change exceeding 15 percent of the rated thermal power within a one hour period provided the average primary coolant temperature $\geq 350^\circ\text{F}$.
- (8) When the fifteen minute degassed beta and gamma activity is less than 10% of the 9 Curie limit given in Specification 3.6.C.

4.19 STEAM GENERATOR INSERVICE INSPECTION

Applicability

Applies to the periodic inservice inspection of the steam generators.

Objective

To provide assurance of the continued integrity of the steam generator pressure boundaries.

Specifications

- A. Each steam generator shall be demonstrated operable pursuant to Specification 3.1.A.2 by performance of the following augmented inservice inspection program and the requirement of Specification 4.2.A.
- B. Steam Generator Sample Selection and Inspection - Each steam generator shall be determined operable during shutdown by selecting and inspection at least the minimum number of steam generators specified in Table 4.19-1.
- C. Steam Generator Tube Sample Selection and Inspection - The steam generator tube minimum sample size, inspection result classification, and the corresponding action required shall be as specified in

Table 4.19-2. The inservice inspection of steam generator tubes shall be performed at the frequencies specified in Specification 4.19.D and the inspected tubes shall be verified acceptable per the acceptance criteria of Specification 4.19.E. The tubes selected for each inservice inspection shall include at least 3% of the total number of tubes in all steam generators; the tubes selected for these inspections shall be selected on a random basis except:

- a. Where experience in similar plants with similar water chemistry indicates critical areas to be inspected, then at least 50% of the tubes inspected shall be from these critical areas.
- b. The first sample of tubes selected for each inservice inspection (subsequent to the preservice inspection) of each steam generator shall include:
 1. All nonplugged tubes that previously had detectable wall penetrations > 20%.
 2. Tubes in those areas where experience has indicated potential problems.
 3. A tube inspection (pursuant to Specification 4.19.E.a.8) shall be performed on each selected tube. If any selected tube does not permit the passage of the eddy current probe for a tube inspection, this shall be recorded and an

adjacent tube shall be selected and subjected to a tube inspection.

c. The tubes selected as the second and third samples (if required by Table 4.19-2) during each inservice inspection may be subjected to a partial tube inspection provided:

1. The tubes selected for these samples include the tubes from those areas of the tube sheet array where tubes with imperfections were previously found.
2. The inspections include those portions of the tubes where imperfections were previously found.

The results of each sample inspection shall be classified into one of the following three categories:

<u>Category</u>	<u>Inspection Results</u>
C-1	Less than 5% of the total tubes inspected are degraded tubes and none of the inspected tubes are defective.
C-2	One or more tubes, but not more than 1% of the total tubes inspected are defective, or between 5% and 10% of the total tubes inspected are degraded tubes.

C-3 More than 10% of the total tubes inspected are degraded tubes or more than 1% of the inspected tubes are defective.

Note: In all inspections, previously degraded tubes must exhibit significant (>10%) further wall penetrations to be included in the above percentage calculations.

D. Inspection Frequencies - The above inservice inspections of steam generator tubes shall be performed at the following frequencies:

- a. The first inservice inspection shall be performed after 6 Effective Full Power Months but within 24 calendar months of initial criticality. Subsequent inservice inspections shall be performed at intervals of not less than 12 nor more than 24 calendar months after the previous inspection. If two consecutive inspections following service under AVT conditions, not including the preservice inspection, result in all inspection results falling into the C-1 category or if two consecutive inspections demonstrate that previously observed degradation has not continued and no additional degradation has occurred, the inspection interval may be extended to a maximum of once per 40 months.

- b. If the results of the inservice inspection of a steam generator conducted in accordance with Table 4.19-2 at 40 month intervals fall in Category C-3, the inspection frequency shall be increased to at least once per 20 months. The increase in inspection frequency shall apply until the subsequent inspections satisfy the criteria of Specification 4.19.D.a; the interval may then be extended to a maximum of once per 40 months.
- c. Additional, unscheduled inservice inspections shall be performed on each steam generator in accordance with the first sample inspection specified in Table 4.19-2 during the shutdown subsequent to any of the following conditions:
1. Primary-to-secondary tube leaks (not including leaks originating from tube-to-tube sheet welds) in excess of the limits of Specification 3.1.C.6.
 2. A seismic occurrence greater than the Operating Basis Earthquake.
 3. A loss-of-coolant accident requiring actuation of the engineered safeguards.
 4. A major main steam line or feedwater line break.

E. Acceptance Criteria

a. As used in this Specification:

1. Imperfection means an exception to the dimensions, finish or contour of a tube from that required by fabrication drawings or specifications. Eddy-current testing indications below 20% of the nominal tube wall thickness, if detectable, may be considered as imperfections.
2. Degradation means a service-induced cracking, wastage, wear or general corrosion occurring on either inside or outside of a tube.
3. Degraded Tube means a tube containing imperfections >20% of the nominal wall thickness caused by degradation.
4. % Degradation means the percentage of the tube wall thickness affected or removed by degradation.
5. Defect means an imperfection of such severity that it exceeds the plugging limit. A tube containing a defect is defective.

6. Plugging Limit means the imperfection depth at or beyond which the tube shall be removed from service because it may become unserviceable prior to the next inspection and is equal to 40% of the nominal tube wall thickness.
 7. Unserviceable describes the condition of a tube if it leaks or contains a defect large enough to affect its structural integrity in the event of an Operating Basis Earthquake, a loss-of-coolant accident, or a steam line or feedwater line break as specified in 4.19.D.c, above.
 8. Tube Inspection means an inspection of the steam generator tube from the point of entry (hot leg side) completely around the U-bend to the top support of the cold leg.
 9. Preservice Inspection means an inspection of the full length of each tube in each steam generator performed by eddy current techniques prior to service to establish a baseline condition of the tubing. This inspection shall be performed using the equipment and techniques expected to be used during subsequent inservice inspections.
- b. The steam generator shall be determined operable after completing the corresponding actions (plug all tubes exceeding the plugging limit and all tubes containing through-wall cracks) required by Table 4.19-2.

F. Reports

- a. Following each inservice inspection of steam generator tubes, the number of tubes plugged in each steam generator shall be reported to the Commission within 15 days.
- b. The complete results of the steam generator tube inservice inspection shall be reported on an annual basis for the period in which the inspection was completed. This report shall include:
 1. Number and extent of tubes inspected.
 2. Location and percent of wall-thickness penetration for each indication of an imperfection.
 3. Identification of tubes plugged.
- c. Results of steam generator tube inspections which fall into Category C-3 and require prompt notification of the Commission shall be reported pursuant to Specification 6.6 prior to resumption of plant operation. The written followup of this report shall provide a description of investigations conducted to determine cause of the tube degradation and corrective measures taken to prevent recurrence.

BASIS

The surveillance requirements for inspection of the steam generator tubes ensure that the structural integrity of this portion of the RCS will be maintained. The program for inservice inspection of steam generator tubes is based on a modification of Regulatory Guide 1.83, Revision 1. Inservice inspection of steam generator tubing is essential in order to maintain surveillance of the conditions of the tubes in the event that there is evidence of mechanical damage or progressive degradation due to design, manufacturing errors, or inservice conditions that lead to corrosion. Inservice inspection of steam generator tubing also provides a means of characterizing the nature and cause of any tube degradation so that corrective measures can be taken.

The unit is expected to be operated in a manner such that the secondary coolant will be maintained within those parameter limits found to result in negligible corrosion of the steam generator tubes. If the secondary coolant chemistry is not maintained within these parameter limits, localized corrosion may likely result in stress corrosion cracking. The extent of cracking during plant operation would be limited by the limitation of steam generator tube leakage between the primary coolant system and the secondary coolant system (primary-to-secondary leakage of 500 gallons per day per steam generator). Cracks having a primary-to-secondary leakage less than this limit during operation will have an adequate margin of safety to

withstand the loads imposed during normal operation and by postulated accidents. Operating plants have demonstrated that primary-to-secondary leakage of 500 gallons per day per steam generator can readily be detected by radiation monitors of steam generator blowdown. Leakage in excess of this limit will require plant shutdown and an unscheduled inspection, during which the leaking tubes will be located and plugged.

Wastage-type defects are unlikely with the all volatile treatment (AVT) of secondary coolant. However, even if a defect of similar type should develop in service, it will be found during scheduled inservice steam generator tube examinations. Plugging will be required of all tubes with imperfections exceeding the plugging limit which, by the definition of Specification 4.19.E.a is 40% of the tube nominal wall thickness. Steam generator tube inspections of operating plants have demonstrated the capability to reliably detect degradation that has penetrated 20% of the original tube wall thickness.

Whenever the results of any steam generator tubing inservice inspection fall into Category C-3, these results will be promptly reported to the Commission pursuant to Specification 6.6 prior to resumption of plant operation. Such cases will be considered by the Commission on a case-by-case basis and may result in a requirement for analysis, laboratory examinations, tests, additional eddy-current inspection, and revision of the Technical Specifications, if necessary.

TABLE 4.19-1

MINIMUM NUMBER OF STEAM GENERATORS TO BE
INSPECTED DURING INSERVICE INSPECTION

Preservice Inspection	No			Yes		
	Two	Three		Two	Three	
No. of Steam Generators						
First Inservice Inspection	All			One	Two	
Second & Subsequent Inservice Inspections	One ¹			One ¹	One ²	

Table Notation:

1. The inservice inspection may be limited to one steam generator on a rotating schedule encompassing $3 N Z$ of the tubes (where N is the number of steam generators in the plant) if the results of the first or previous inspections indicate that all steam generators are performing in a like manner. Note that under some circumstances, the operating conditions in one or more steam generators may be found to be more severe than those in other steam generators. Under such circumstances the sample sequence shall be modified to inspect the most severe conditions.
2. The other steam generator not inspected during the first inservice inspection shall be inspected. The third and subsequent inspections should follow the instructions described in 1 above.

TABLE 4.19-2

STEAM GENERATOR TUBE INSPECTION

1st SAMPLE INSPECTION			2nd SAMPLE INSPECTION		3rd SAMPLE INSPECTION	
Sample Size	Result	Action Required	Result	Action Required	Result	Action Required
A minimum of 8 Tubes per S.G.	C-1	None	N/A	N/A	N/A	N/A
	C-2	Plug defective tubes and inspect additional 2S tubes in this S.G.	C-1	None	N/A	N/A
			C-2	Plug defective tubes and inspect additional 4S tubes in this S.G.	C-1	None
					C-2	Plug defective tubes
			C-3	Perform action for C-3 result of first sample	C-3	Perform action for C-3 result of first sample
	C-3	Perform action for C-3 result of first sample	N/A	N/A		
	C-3	Inspect all tubes in this S.G., plug defective tubes and inspect 2S tubes in each other S.G. Prompt notification to NRC pursuant to specification 6.6.	All other S.G.s are C-1	None	N/A	N/A
			Some S.G.s C-2 but no additional S.G. are C-3	Perform action for C-2 result of second sample	N/A	N/A
			Additional S.G. is C-3	Inspect all tubes in each S.G. and plug defective tubes. Prompt notification to NRC pursuant to specification 6.6.	N/A	N/A

$n = \frac{N}{n}$ Where N is the number of steam generators in the unit, and n is the number of steam generators inspected during an inspection

Amendment No. 65

TS 4.19-12

UNITED STATES NUCLEAR REGULATORY COMMISSIONDOCKET NO. 50-280VIRGINIA ELECTRIC AND POWER COMPANYNOTICE OF ISSUANCE OF AMENDMENT TO FACILITY
OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 65 to Facility Operating License No. DPR-32 issued to Virginia Electric and Power Company, which revised Technical Specifications for operation of the Surry Power Station, Unit No. 1 (the facility) located in Surry County, Virginia. The amendment is effective as of the date of issuance.

The amendment incorporates steam generator inservice inspection requirements and reactor coolant and secondary coolant iodine radioactivity concentration limits into the Technical Specifications and deletes a license condition that previously governed steam generator inspections. This amendment is identical to the one issued for Unit 2 on December 20, 1979 and the Safety Evaluation Report for that amendment applied to Unit 1.

These changes have been made to provide inservice inspection requirements suitable for essentially new steam generators in accordance with Regulatory Guide 1.83. Previous requirements were tailored to deteriorating steam generator tubes which were removed as a part of the steam generator repair program approved on January 19, 1979 and implemented on September 14, 1980.

The application for the amendment 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 amendment. Prior

-2-

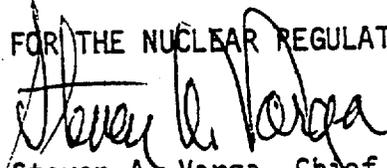
public notice of this amendment was not required since this amendment does not involve a significant hazards consideration.

The Commission has determined that the issuance of this amendment 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 this amendment.

For further details with respect to this action, see (1) the application for amendment dated December 30, 1976, as supplemented May 24, 1979, (2) Amendment No. 65 to License No. DPR-32 and (3) the Commission's related Safety Evaluation issued December 20, 1979. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, NW., 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 Licensing.

Dated at Bethesda, Maryland, this 10th day of February, 1981

FOR THE NUCLEAR REGULATORY COMMISSION


Steven A. Varga, Chief
Operating Reactors Branch #1
Division of Licensing