October 15, 1984

Docket Nos. 50-280
and 50-281

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Mr. W. L. Stewart
Vice President - Nuclear Operations
Virginia Electric and Power Company
Post Office Box 26666
Richmond, Virginia 23261

Dear Mr. Stewart:

The Commission has issued the enclosed Amendment No. 100 to Facility Operating License No. DPR-32 and Amendment No. 99 to Facility Operating License No. DPR-37 for the Surry Power Station, Unit Nos. 1 and 2, respectively. The amendments consist of changes to the Technical Specifications in response to your applications transmitted by letters dated March 31 and June 16, 1983, and February 9, 1984 (as supplemented February 14 and 21, 1984).

These amendments revise the Technical Specifications to add requirements related to NUREG-0737 items requested by NRC Generic Letter 83-27. The items are: Reactor Coolant System Vents (II.B.1), Post-Accident Sampling (II.B.3), Noble Gas Effluent Monitors (II.F.1.1), Sampling and Analysis of Plant Effluents (II.F.1.2), Containment High-Range Radiation Monitor (II.F.1.3), Containment Pressure Monitor (II.F.1.4), Containment Water Level Monitor (II.F.1.5), Containment Hydrogen Monitor (II.F.1.6), Instrumentation for Detection of Inadequate Core Cooling (II.F.2), and Control Room Habitability Requirements (III.D.3.4).

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular monthly Federal Register notice.

Sincerely,

/s/JDNeighbors

Joseph D. Neighbors, Project Manager
Operating Reactors Branch #1
Division of Licensing

Enclosures:
1. Amendment No. 100 to DPR-32
2. Amendment No. 99 to DPR-37
3. Safety Evaluation

cc: w/enclosures
See next page

| ORB#1:DL | ORB#1:DL | C-ORB#1:DL | OELD | AD:OR:DL |
|---|---|---|---|---|
| CParrish | JDNeighbors/ts | SVarga | J. Gray | GLainas |
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

October 15, 1984

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Post Office Box 26666
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cc: w/enclosures
See next page

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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. 100
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 March 31, 1983, June 16, 1983, and February 9, 1984 (as supplemented February 14 and 21, 1984), 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. 100, 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

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 15, 1984

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

VIRGINIA ELECTRIC AND POWER COMPANY

DOCKET NO. 50-281

SURRY POWER STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 99
License No. DPR-37

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Virginia Electric and Power Company (the licensee) dated March 31, 1984, June 16, 1983, and February 9, 1984 (as supplemented February 14 and 21, 1984), 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. 99 , 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 and shall be implemented prior to startup from the 1985 refueling outage.

FOR THE NUCLEAR REGULATORY COMMISSION

Steven A. Varga

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 15, 1984

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 100 FACILITY OPERATING LICENSE NO. DPR-32

AMENDMENT NO. 99 FACILITY OPERATING LICENSE NO. DPR-37

DOCKET NOS. 50-280 AND 50-281

Revise Appendix A as follows:

| Remove Pages | Insert Pages |
|---|---|
| 3.1-5 | 3.1-5 |
| 3.1-5a | 3.1-5a |
| 3.1-5b | 3.1-5b |
| 3.1-5c | 3.1-5c |
| 3.7-2a | 3.7-2a |
| ------ | 3.7-2b |
| 3.7-9 | 3.7-9 |
| ------ | 3.7-9a |
| ------ | 3.7-9b |
| ------ | 3.7-9c |
| 3.7-20 | 3.7-20 |
| 3.7-21 | 3.7-21 |
| ------ | 3.7-22 |
| 4.1-1 | 4.1-1 |
| 4.1-9 | 4.1-9 |
| 4.1-9a | 4.1-9a |
| 4.1-9d | 4.1-9d |
| 6.4-7 | 6.4-7 |

c. With the pressurizer otherwise inoperable, be in at least hot shutdown with the reactor trip breakers open within 6 hours and the reactor coolant system temperature and pressure less than 350°F and 450 psig, respectively, within the following 12 hours.

6. Relief Valves

a. Two power operated relief valves (PORVs) and their associated block valves shall be operable whenever the reactor keff is ≥ 0.99.

b. With one or more PORVs inoperable, within 1 hour either restore the PORV(s) to operable status or close the associated block valve(s) and remove power from the block valve(s); otherwise, be in at least hot shutdown within the next 6 hours and in cold shutdown within the following 30 hours.

c. With one or more block valve(s) inoperable, within 1 hour either restore the block valve(s) to operable status or close the block valve(s) and remove power from the block valve(s); otherwise, be in at least hot shutdown within the next 6 hours and in cold shutdown within the following 30 hours.

7. Reactor Vessel Head Vents

a. At least two Reactor Vessel Head vent paths consisting of two isolation valves in series powered from emergency buses shall be operable and closed whenever RCS temperature and pressure are > 350°F and 450 psig.

b. With one Reactor Vessel Head vent path inoperable; startup and/or power operation may continue provided the inoperable vent path is maintained closed with power removed from the valve actuator of both isolation valves in the inoperable vent path.

c. With two Reactor Vessel Head vent paths inoperable; maintain the inoperable vent path closed with power removed from the valve actuator of all isolation valves in the inoperable vent paths, and restore at least one of the vent paths to operable status within 30 days or be in hot standby within 6 hours and in cold shutdown within the following 30 hours.

## Basis

Specification 3.1.A-1 requires that a sufficient number of reactor coolant pumps be operating to provide coastdown core cooling flow in the event of a loss of reactor coolant flow accident. This provided flow will maintain the DNBR above 1.30.(1) Heat transfer analyses also show that reactor heat equivalent to approximately 10% of rated power can be removed with natural circulation; however, the plant is not designed for critical operation with natural circulation or one loop operation and will not be operated under these conditions.

When the boron concentration of the Reactor Coolant System is to be reduced the process must be uniform to prevent sudden reactivity changes in the reactor. Mixing of the reactor coolant will be sufficient to maintain a uniform concentration if at least one reactor coolant pump or one residual heat removal pump is running while the change is taking place. The residual heat removal pump will circulate the equivalent of the reactor coolant system volume in approximately one half hour.

One steam generator capable of performing its heat transfer function will provide sufficient heat removal capability to remove core decay heat after a normal reactor shutdown. The requirement for redundant coolant loops ensures the capability to remove core decay heat when the reactor coolant system average temperature is less than or equal to 350°F. Because of the low-low steam generator water level reactor trip, normal reactor criticality cannot be achieved without water in the steam generators in reactor coolant loops with open loop stop valves. The requirement for two operable steam generators, combined with the requirements of Specification 3.6, ensure adequate heat removal capabilities for reactor coolant system temperatures of greater than 350°F.

Each of the pressurizer safety valves is designed to relieve 295,000 lbs. per hr. of saturated steam at the valve setpoint. Below 350°F and 450 psig in the Reactor Coolant System, the Residual Heat Removal System can remove decay heat and thereby control system temperature and pressure. There are no credible accidents which could occur when the Reactor Coolant System is connected to the Residual Heat Removal System which could give a surge rate exceeding the capacity of one pressurizer safety valve. Also, two safety valves have a capacity greater than the maximum surge rate resulting from complete loss of load.[2]

The limitation specified in item 4 above on reactor coolant loop isolation will prevent an accidental isolation of all the loops which would eliminate the capability of dissipating core decay heat when the Reactor Coolant System is not connected to the Residual Heat Removal System.

The requirement for steam bubble formation in the pressurizer when the reactor passes 1% subcriticality will ensure that the Reactor Coolant System will not be solid when criticality is achieved.

The requirement that 125 Kw of pressurizer heaters and their associated controls be capable of being supplied electrical power from an emergency bus provides assurance that these heaters can be energized during a loss of offsite power condition to maintain natural circulation at hot shutdown.

The power operated relief valves (PORVs) operate to relieve RCS pressure below the setting of the pressurizer code safety valves. These relief valves have remotely operated block valves to provide a positive shutoff capability should a relief valve become inoperable. The electrical power for both the relief valves and the block valves is capable of being supplied from an emergency power source to ensure the ability to seal this possible RCS leakage path.

The accumulation of non-condensable gases in the Reactor Coolant System may result from sudden depressurization, accumulator discharges and/or inadequate core cooling conditions. The function of the Reactor Vessel Head Vent is to remove non-condensable gases from the reactor vessel head. The Reactor Vessel Head Vent is designed with redundant safety grade vent paths. Venting of non-condensable gases from the pressurizer steam space is provided primarily through the Pressurizer PORVs. The pressurizer is, however, equipped with a steam space vent designed with redundant safety grade vent paths.

<u>References:</u>

(1) FSAR Section 14.2.9

(2) FSAR Section 14.2.10

3. The requirements of Specification 3.0.1 and 6.6.2 are not applicable.

F. The accident monitoring instrumentation for its associated operable components listed in TS Table 3.7-6 shall be operable in accordance with the following:

   1. With the number of operable accident monitoring instrumentation channels less than the total number of channels shown in TS Table 3.7-6, either restore the inoperable channel(s) to operable status within 7 days or be in at least hot shutdown within the next 12 hours.

   2. With the number of operable accident monitoring instrumentation channels less than the minimum channels operable requirement of TS Table 3.7-6, either restore the inoperable channel(s) to operable status within 48 hours or be in at least hot shutdown within the next 12 hours.

G. The Main Control Room Chlorine Detection System shall be operable at all times. The number of operable channels, alarm/trip setpoint, and required operator actions shall be as specified in Table 3.7-7. This capability shall be demonstrated by the surveillance requirements specified in Table 4.1-1.

H. The containment hydrogen analyzers and associated support equipment shall be operable in accordance with the following:

1. A reactor shall not be made critical nor be operated at power without two independent containment hydrogen analyzers operable.

2. During power operation or return to criticality from hot shutdown conditions, the following restrictions apply:

   a. With one hydrogen analyzer inoperable, restore the inoperable analyzer to operable status within 30 days or be in at least hot standby within the next 6 hours.

   b. With both hydrogen analyzers inoperable, restore at least one analyzer to operable status within 7 days or be in at least hot standby within the next 6 hours.

   Note: Operability of the hydrogen analyzers includes proper operation of the respective Heat Tracing System.

monitor indication. The pressurizer safety valves utilize an acoustic monitor channel and a downstream high temperature indication channel. This capability is consistent with the recommendations of Regulatory Guide 1.97, "Instrumentation for Light Water Cooled Nuclear Power Plants to Assess Plant Conditons During and Following an Accident", December 1975, and NUREG-0578, "TMI-2 Lessons Learned Task Force Status Report and Short Term Recommendations". Potential accident effluent release paths are equipped with radiation monitors to detect and measure concentrations of noble gas fission products in plant gaseous effluents during and following an accident. The effluent release paths monitored are the Process Vent Stack, Ventilation Vent Stack, Main Steam Safety Valve and Atmospheric Dump Valve discharge and the Auxiliary Feedwater Pump Turbine Exhaust. These monitors meet the requirements of NUREG 0737.

Radioactive Liquid Effluent Monitoring Instrumentation

The radioactive liquid effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in liquid effluents during actual or potential releases of liquid effluents. The alarm/trip setpoints for these instruments shall be calculated and adjusted in accordance with the procedures in the ODCM to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR Part 20. The operability and use of this instrumentation is consistent with the requirements of General Design Criteria 60, 63 and 64 of Appendix A to 10 CFR Part 50. The purpose of tank level indicating devices is to assure the detection and control of leaks that if not controlled could potentially result in the transport of radioactive materials to unrestricted areas.

Radioactive Gaseous Effluent Monitoring Instrumentation

The radioactive gaseous effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in gaseous effluents during actual or potential releases of gaseous effluents. The alarm/trip setpoints for these instruments shall be calculated and adjusted in accordance with the procedures in the ODCM to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR Part 20. This instrumentation also includes provisions for monitoring (and controlling) the concentrations of potentially explosive gas mixtures in the waste gas holdup system. The operability and use of this instrumentation is consistent with the requirements of General Design Criteria 60, 63 and 64 or Appendix A to 10 CFR Part 50.

Containment Hydrogen Analyzers

Continuous indication of hydrogen concentration in the containment atmosphere is provided in the control room over the range of 0 to 10 percent hydrogen concentration.

These redundant, qualified hydrogen analyzers are shared by Units 1 and 2 with the capability of measuring containment hydrogen concentration for the range of 0 to 10 percent and the installation of instrumentation to indicate and record this measurement.

A transfer switch with control circuitry is provided for the capability of Unit 1 to utilize both analyzers or for Unit 2 to utilize both analyzers.

Each unit's hydrogen analyzer will receive a transferable power supply from Unit 1 and Unit 2. This will ensure redundancy for each unit.

Indication of Unit 1 and Unit 2 hydrogen concentration is provided on Unit 1 PAMC panel and Unit 2 PAMC panel. Hydrogen concentration is also recorded on qualified recorders. In addition, each hydrogen analyzer is provided with an alarm for trouble/high hydrogen content. These alarms are located in the control room.

The supply lines installed from the containment penetrations to the hydrogen analyzers have Category I Class IE heat tracing applied. The heat tracing system receives the same transferable emergency power as is provided to the containment hydrogen analyzers. The heat trace system is de-energized during normal system operation. Upon receipt of a safety injection signal (Train A or Train B), the system is automatically started, after a preset time delay, to bring the piping process temperature to 250°F ± 10°F within 20 minutes. Each heat trace circuit is equipped with an RTD to provide individual circuit readout, over temperature alarm and cycles the circuit to maintain the process temperature via the solid state control modules.

The hydrogen analyzer heat trace system is equipped with high temperature, loss of D. C. power, loss of A. C. power, loss of control power and failure of automatic initiation alarms.

## Control Room Chlorine Detection System

The operability of the chlorine detection system ensures that sufficient capability is available to promptly detect and automatically initiate protective action in the event of an accidental chlorine release. This capability is required to protect control room personnel, and is consistent with the recommendations of Regulatory Guide 1.95, "Protection of Nuclear Power Plant Control Room Operators Against an Accidental Chlorine Release", February 1975.

References

(1) FSAR - Section 7.5

(2) FSAR - Section 14.5

(3) FSAR - Section 14.3.2

(4) FSAR - Section 11.3.3

## TABLE 3.7-5

### AUTOMATIC FUNCTIONS OPERATED FROM RADIATION MONITORS ALARM

| MONITOR CHANNEL | AUTOMATIC FUNCTION AT ALARM CONDITIONS | MONITORING REQUIREMENTS | ALARM SETPOINT μCI/cc |
|---|---|---|---|
| 1. Process vent particulate and gas monitors (RM-GW-101 & RM-GW-102) | Stops discharge from containment vacuum systems and waste gas decay tanks (shuts Valve Nos. RCV-GW-160, FCV-GW-260, FCV-GW-101) | See Specifications 3.11 and 4.9 | Particulate $\leq 4\times10^{-8}$<br>Gas $\leq 9\times10^{-2}$ |
| 2. Component cooling water radiation monitors | Shuts surge tank vent valve HCV-CC-100 | See Specifications 3.13 and 4.9 | Twice Background |
| 3. Liquid waste disposal radiation monitors (RM-LW-108) | Shuts effluent discharge valves FCV-LW-104A and FCV-LW-104B | See Specification 3.11 and 4.9 | $\leq 1.5\times10^{-3}$ |
| 4. Condenser air ejector radiation monitors (RM-SV-111 & RM-SV-211) | Diverts flow to the containment of the affected unit (Opens TV-SV-102 and shuts TV-SV-103 or opens TV-SV-202 and shuts TV-SV-203) | See Specification 3.11 and 4.9 | $\leq 1.3$ |
| 5. Containment particulate and gas monitors (RM-RMS-159 & RM-RMS-160, RM-RMS-259 & RM-RMS-260) | Trips affected unit's purge supply and exhaust fans, closes affected unit's purge air butterfly valves (MOV-VS-100A, B, C & D or MOV-VS-200A, B, C & D) | See Specifications 3.10 and 4.0 | Particulate $\leq 9\times10^{-9}$<br>Gas $\leq 1\times10^{-5}$ |
| 6. Manipulator crane area monitors (RM-RMS-162 & RM-RMS-262) | Trips affected unit's purge supply and exhaust fans, closes affected unit's purge air butterfly valves (MOV-VS-100A, B, C & D or MOV-VS-200A, B, C & D) | See Specifications 3.10 and 4.9 | $\leq$ 50 mrem/hr |
| 7. Process vent normal and high range effluent monitors (RM-GW-130-1 and RM-GW-130-2) | Stops discharge from containment vacuum system and waste gas decay tanks (shuts valves FCV-GW-160, FCV-GW-260, and FCV-GW-101) | See Specifications 3.11 and 4.9 | Gas $\leq 9\times10^{-2}$ |

## TABLE 3.7-6
## ACCIDENT MONITORING INSTRUMENTATION

| INSTRUMENT | TOTAL NO. OF CHANNELS | MINIMUM CHANNELS OPERABLE |
|---|---|---|
| 1. Auxiliary Feedwater Flow Rate | 1 per S/G | 1 per S/G |
| 2. Reactor Coolant System Subcooling Margin Monitor | 2 | 1 |
| 3. PORV Position Indicator (Primary Detector) | 1/valve | 1/valve |
| 4. PORV Position Indicator (Backup Detector) | 1/valve | 0 |
| 5. PORV Block Valve Position Indicator | 1/valve | 1/valve |
| 6. Safety Valve Position Indicator (Primary Detector) | 1/valve | 1/valve |
| 7. Safety Valve Position Indicator (Backup Detector) | 1/valve | 0 |
| 8. Reactor Vessel Coolant Level Monitor | 2 | 1 |
| 9. Containment Pressure | 2 | 1 |
| 10. Containment Water Level (Narrow Range) | 2 | 1 |
| 11. Containment Water Level (Wide Range) | 2 | 1 |
| 12. Containment High Range Radiation Monitor | 2 | 1 (Note 1, b and c only) |
| 13. Process Vent High Range Effluent Monftor | 2 | 2 (Note 1, a, b, and c) |
| 14. Ventilation Vent High Range Effluent Monitor | 2 | 2 (Note 1, a, b, and c) |
| 15. Main Steam High Range Radiation Monitors (Units 1 and 2) | 3 | 3 (Note 1, a, b, and c) |
| 16. Aux. Feed Pump Steam Turbine Exhaust Radiation Monitor | 1 | 1 (Note 1, a, b, and c) |

Note 1: With the number of operable channels less than required by the Minimum Channels Operable requirements within 72 hours

a. Initiate the preplanned alternate method of monitoring the appropriate parameter(s), within 72 hours
b. Either restore the inoperable channel to operable status within 7 days of the event, or
c. Prepare and submit a Special Report to the commission pursuant to specification 6.6 within 14 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to operable.

## TABLE 3.7-7

## MAIN CONTROL ROOM CHLORINE DETECTION SYSTEM

| No. | 1<br>Functional Unit | 2<br>Total No. of Channels | 3<br>Alarm/Trip Setpoint | 4<br>Operator Action if Condition in Column 2 Cannot be Met |
|---|---|---|---|---|
| 1. | Chlorine Detector | 2 | ≤ 5 ppm chlorine | With one channel inoperable, restore the inoperable channel within seven days; or within the next 6 hours, initiate and maintain operation of the control room emergency ventilation system.<br><br>With two channels inoperable, within one hour initiate and maintain operation of the control room emergency ventilation system. |

# 4.1 OPERATIONAL SAFETY REVIEW

## Applicability

Applies to items directly related to safety limits and limiting conditions for operation.

## Objective

To specify the minimum frequency and type of surveillance to be applied to unit equipment and conditions.

## Specification

A. Calibration, testing, and checking of instrumentation channels shall be performed as detailed in Table 4.1-1 and 4.1-2.

B. Equipment tests shall be conducted as detailed below and in Table 4.1-2A.

1. Each Pressurizer PORV shall be demonstrated operable:
    a. At least once per 31 days by performance of a channel functional test, excluding valve operation, and
    b. At least once per 18 months by performance of a channel calibration.

2. Each Pressurizer PORV block valve shall be demonstrated operable at least once per 92 days by operating the valve through one complete cycle of full travel.

3. The pressurizer water volume shall be determined to be within its limit as defined in Specification 2.3.A.3.a at least once per 12 hours whenever the reactor is not subcritical by at least 1% $\Delta k/k$.

4. Each Reactor Vessel Head vent path isolation valve not required to be closed by Specification 3.1.A.7a or 3.1.A.7.b shall be demonstrated operable at each cold shutdown but not more often than once per 92 days by operating the valve through one complete cycle of full travel from the control room.

5. Each Reactor Vessel Head vent path shall be demonstrated operable following each refueling by:

   a. Verifying that the upstream manual isolation valve in each vent path is locked in the open position.

   b. Cycling each isolation valve through at least one complete cycle of full travel from the control room.

   c. Verifying flow through the reactor vessel head vent system vent paths.

C. Sampling tests shall be conducted as detailed in Table 4.1-2B.

D. Whenever containment integrity is not required, only the asterisked items in Table 4.1-1 and 4.1-2A and 4.1-2B are applicable.

E. Flushing of sensitized stainless steel pipe sections shall be conducted as detailed in TS Table 4.1-3A and 4.1-3B.

F. The outside containment purge and vent isolation valves and the isolation valve in the steam jet air ejector suction line outside containment shall be determined locked, sealed, or otherwise secured in the closed position at least once per 31 days.

G. The inside containment purge and vent isolation valves shall be determined locked, seal, or otherwise secured in the closed position each cold shutdown but not more often than once per 92 days.

## TABLE 4.1-1 (Continued)

| Channel Description | Check | Calibrate | Test | Remarks |
|---|---|---|---|---|
| 34. Loss of Power | | | | |
| a. 4.16 KV Emergency Bus undervoltage (Loss of voltage) | N.A. | R | M | |
| b. 4.16 KV Emergency Bus undervoltage (Degraded voltage) | N.A. | R | M | |
| 35. Control Room Chlorine Detectors | S | R | M | |

## TABLE 4.1-2

## ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

| INSTRUMENT | CHANNEL CHECK | CHANNEL CALIBRATION |
|---|---|---|
| 1. Auxiliary Feedwater Flow Rate | P | R |
| 2. Reactor Coolant System Subcooling Margin Monitor | M | R |
| 3. PORV Position Indicator (Primary Detector) | M | R |
| 4. PORV Position Indicator (Backup Detector) | M | R |
| 5. PORV Block Valve Position Indicator | M | R |
| 6. Safety Valve Position Indicator | M | R |
| 7. Safety Valve Position Indicator (Backup Detector) | M | R |
| 8. Reactor Vessel Coolant Level Monitor | M | R |
| 9. Containment Pressure | M | R |
| 10. Containment Water Level (Narrow Range) | M | R |
| 11. Containment Water Level (Wide Range) | M | R |

TABLE 4.1-2A (CONTINUED)

MINIMUM FREQUENCY FOR EQUIPMENT TESTS

| DESCRIPTION | TEST | FREQUENCY | FSAR SECTION REFERENCE |
|---|---|---|---|
| 18. Primary Coolant System | Functional | 1. Periodic leakage testing [a] on each valve listed in Specification 3.1.C.7a shall be accomplished prior to entering power operation condition after every time the plant is placed in the cold shutdown condition for refueling, after each time the plant is placed in cold shutdown condition for 72 hours if testing has not been accomp lished in the preceeding 9 months, and prior to returning the valve to service after maintenance, repair or replace-ment work is performed. | |
| 19. Containment Purge MOV Leakage | Functional | Semi-Annual (Unit at power or shutdown) if purge valves are operated during interval (c) | |
| 20. Containment Hydrogen Analyzers | a. Channel Check | Once per 12 hours | |
| | b. Channel Functional Test | Once per 31 days | |
| | c. Channel Calibration using sample gas containing:<br>1. One volume percent (± 0.25%) hydrogen, balance nitrogen<br>2. Four volume percent (± 0.25%) hydrogen, balance nitrogen<br>3. Channel Calibration test will include startup and operation of the Heat Tracing System | Once per 92 days on staggered basis | |

(a) To satisfy ALARA requirements, leakage may be measured indirectly (as from the performance of pressure indicators) if accomplished in accordance with approved procedures and supported by computations showing that the method is capable of demonstrating valve compliance with the leakage criteria.

(b) Minimum differential test pressure shall not be below 150 psid.

(c) Refer to Section 4.4 for acceptance criteria.

*See Specification 4.1.D.

L. Iodine Monitoring

The licensee shall implement a program which will ensure the capability to accurately determine the airborne iodine concentration in vital area under accident conditions. This program shall include the following:

1. Training of personnel,
2. Procedures for monitoring, and
3. Provisions for maintenance of sampling and analysis equipment.

M. Post-Accident Sampling

A program shall be established, implemented and maintained which will ensure the capability to obtain and analyze reactor coolant, radioactive iodines and particulates in plant gaseous effluents, and containment atmosphere samples under accident conditions. The program shall include the following:

1. Training of personnel,
2. Procedures for sampling and analysis,
3. Procedures for maintenance of sampling and analysis equipment.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 100 TO FACILITY OPERATING LICENSE NO. DPR-32

AND AMENDMENT NO. 99 TO FACILITY OPERATING LICENSE NO. DPR-37

VIRGINIA ELECTRIC AND POWER COMPANY

SURRY POWER STATION, UNIT NOS. 1 AND 2

DOCKET NOS. 50-280 AND 50-281

## INTRODUCTION AND BACKGROUND

In November 1980, the staff issued NUREG-0737, "Clarification of TMI Action Plan Requirements", which included all TMI Action Plan items approved by the Commission for implementation at nuclear power reactors. NUREG-0737 identifies those items for which Technical Specifications were scheduled for implementation after December 31, 1981. The staff provided guidance on the scope of Technical Specifications for all of these items in Generic Letter 83-37. Generic Letter 83-37 was issued to all Pressurized Water Reactor (PWR) licensees on November 1, 1983. In this Generic Letter, the staff requested licensees to:

1. review their facility's Technical Specifications to determine if they were consistent with the guidance provided in the Generic Letter, and

2. submit an application for a license amendment where deviations or absence of Technical Specifications were found.

By letters dated March 31 and June 16, 1983, and February 9, 14, 21, 1984, Virginia Electric and Power Company (the licensee) responded to requests for Surry Units 1 and 2. This evaluation covers the following TMI Action Plan items:

1. Reactor Coolant System Vents (II.B.1)
2. Post-Accident Sampling (II.B.3)
3. Noble Gas Effluent Monitors (II.F.1.1)
4. Sampling and Analysis of Plant Effluents (II.F.1.2)
5. Containment High-Range Radiation Monitor (II.F.1.3)
6. Containment Pressure Monitor (II.F.1.4)
7. Containment Water Level Monitor (II.F.1.5)
8. Containment Hydrogen Monitor (II.F.1.6)
9. Instrumentation for Detection of Inadequate Core Cooling (II.F.2)
10. Control Room Habitability Requirements (III.D.3.4)

EVALUATION

1. Reactor Coolant System Vents (II.B.1)

Our guidance for RCS vents identified the need for at least one operable vent path at the reactor vessel head and the pressurizer steam space, for Westinghouse reactors. Generic Letter 83-37 also provided limiting conditions for operation and the surveillance requirements for the RCS vents. The licensee has proposed TSs that are consistent with our guidance. We find the proposed TSs to be acceptable.

2. Post-Accident Sampling (II.B.3)

The guidance provided by Generic Letter 83-37 requested that an administrative program should be established, implemented and maintained to ensure that the licensee has the capability to obtain and analyze reactor coolant and containment atmosphere samples under accident conditions. The Post-Accident Sampling System is not required to be operable at all times. Administrative procedures are to be established for returning inoperable instruments to operable status as soon as practicable.

The licensee has provided a proposed revision to the TS which is consistent with the guidelines provided in our Generic Letter 83-37. We conclude that the licensee has an acceptable TS for the Post-Accident Sampling System.

3. Noble Gas Effluent Monitors (II.F.1.1)

The licensee has supplemented the existing normal range monitors to provide noble gas monitoring in accordance with Item II.F.1.1. Proposed TSs were submitted that are consistent with the guidelines provided in our Generic Letter 83-37. We conclude that the TSs for Item II.F.1.1 are acceptable.

4. Sampling and Analysis of Plant Effluents (II.F.1.2)

The guidance provided by Generic Letter 83-37 requested that an administrative program should be established, implemented and maintained to ensure the capability to collect and analyze or measure representative samples of radioactive iodines and particulates in plant gaseous effluents during and following an accident. The licensee has proposed TSs that are consistent with our guidance. We conclude that the TSs for sampling and analysis of plant effluents are acceptable.

5. Containment High-Range Radiation Monitor (II.F.1.3)

The licensee has installed two in-containment monitors in each Surry Unit that is consistent with the guidance of TMI Action Plan Item II.F.1.3. Generic Letter 83-37 provided guidance for limiting conditions of operation and surveillance requirements for these monitors. The licensee proposed TSs that are consistent with the guidance provided in our Generic Letter 83-37. We conclude that the proposed TSs for Item II.F.1.3 are acceptable.

6. Containment Pressure Monitor (II.F.1.4)

Each Surry Unit has been provided with two supplementary channels for monitoring containment pressure following an accident. The licensee has proposed TSs that are consistent with the guidelines contained in Generic Letter 83-37. We conclude that the proposed TSs for containment pressure monitor are acceptable.

7. Containment Water Level Monitor (II.F.1.5)

Narrow range and wide range containment water level monitors provide the capability required by TMI Action Plan Item II.F.1.5. The TSs for both units contain limiting conditions of operation and surveillance requirements that are consistent with the guidance contained in Generic Letter 83-37. We conclude that the proposed TSs for containment water level monitors are acceptable.

8. Containment Hydrogen Monitor (II.F.1.6)

The licensee installed containment hydrogen monitors that provide the capability required by TMI Action Plan Item II.F.1.6. The proposed Surry Units 1 and 2 Technical Specifications contain appropriate limiting conditions of operation and surveillance for these monitors. We conclude that the proposed TSs are acceptable as they are consistent with the guidance contained in Generic Letter 83-37.

9. Instrumentation for Detection of Inadequate Core Cooling (II.F.2)

Generic Letter 83-37 provided the guidance on TSs for the subcooling margin monitors, a reactor coolant inventory tracking system and core exit thermocouples. We have reviewed the proposed TSs for the reactor coolant inventory tracking system (denoted as Surry Power Station Reactor Vessel Level Instrumentation System by VEPCO) and conclude that the proposed TSs are acceptable as they meet the intent of our guidance contained in Generic Letter 83-37. Technical Specifications for the subcooling margin monitors already exist. The Technical Specifications for the core exit thermocouples will be the subject of further action.

10. Control Room Habitability (III.D.3.4)

The guidance of NUREG-0737 requires assurance on the part of the licensee that control room operators will be adequately protected against the effects of an accidental release of toxic and/or radioactive gases from sources either onsite or offsite. Generic Letter 83-37 provided guidance on the toxic gas detection system, and a control room emergency air filtration system.

Based upon the results of a licensee sponsored study, a redundant chlorine detection system was added to the control room ventilation system. A redundant bottled dry air tank was also added. The licensee has proposed TSs for the chlorine detection system. We have reviewed the proposed TSs for chlorine detection system and conclude that the proposed TSs are acceptable as they meet the intent of our guidance contained in Generic Letter 83-37. Technical Specifications for the Control Room ventilation system were issued on January 17, 1984. The licensee's February 14, 1984, letter stated that a review was being made to simplifly the format, but a telephone conversation on September 7, 1984 revealed that no Technical Specification submittal is planned. We conclude that the existing Control Room Technical Specifications are sufficient.

## Environmental Consideration

These amendments involve a change in the installation or use of the facilities components located within the restricted areas as defined in 10 CFR 20. The staff has determined that these amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupation radiation exposure. The Commission has previously issued a proposed finding that these amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, these amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR Sec 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of these amendments.

## Conclusion

We have concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) 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.

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