June 28, 1985

Docket Nos. 50-338
and 50-339

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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 Amendments No. 64 and No. 49 to Facility Operating License Nos. NPF-4 and NPF-7 for the North Anna Power Station, Units No. 1 and No. 2 (NA-1&2). The amendments revise the Technical Specifications (TS) in response to your letters dated June 3 and June 9, 1983 which were submitted in response to NRC Generic Letter 83-37 providing guidance on the scope of TS for NUREG-0737.

The following TMI action items are addressed by these amendments: (1) Reactor Coolant System Vents (II.B.1); (2) Noble Gas Effluent Monitors (II.F.1.1); (3) Containment High-Range Radiation Monitor (II.F.1.3); (4) Containment Pressure Monitor (II.F.1.4); (5) Containment Water Level Monitor (II.F.1.5); (6) Containment Hydrogen Monitor (II.F.1.6); and (7) Instrumentation for Detection of Inadequate Core Cooling (II.F.2).

The existing TSs for Items II.E.1.1 - Long Term Auxiliary Feedwater System Evaluation and III.D.3.4 - Control Room Habitability Requirements were found acceptable in our August 1980, North Anna Unit 2 Safety Evaluation Report, Supplement 11, which also included an evaluation for Unit 1.

Your submittal dated February 9, 1984 addressed the guidance provided in Generic Letter 83-37 regarding the administrative program for the Post-Accident Monitoring System (II.B.3) and Sampling and Analysis of Plant Effluents (II.F.1.2). This proposed change to the NA-1&2 TS will be addressed in a forthcoming license amendment. In addition, it is our understanding that the NA-1&2 TS for subcooling margin monitor and the core exit thermocouple system are presently in preparation by you.

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A copy of the Safety Evaluation is also enclosed. The notice of issuance will be included in the Commission's next monthly Federal Register notice.

Sincerely,

/S/

Leon B. Engle, Project Manager
Operating Reactors Branch #3
Division of Licensing

Enclosure:
1. Amendment No. 64 to NPF-4
2. Amendment No. 49 to NPF-7
3. Safety Evaluation

cc w/enclosures:
See next page

ORB#3:DL	ORB#3:DL	ORB#3:DL	OELD	AD-OR:DL
PKreutzer	LEngle	EJButcher		GLainas
6/11/85	6/11/85	6/20/85	6/21/85	6/21/85

Mr. W. L. Stewart
Virginia Electric & Power Company

North Anna Power Station

Richard M. Foster, Esq.
Musick, Williamson, Schwartz,
Leavenworth & Cope, P.C.
P. O. Box 4579
Boulder, Colorado 80306

Michael W. Maupin, Esq.
Hunton, Williams, Gay and Gibson
P. O. Box 1535
Richmond, Virginia 23212

Mr. W. T. Lough
Virginia Corporation Commission
Division of Energy Regulation
P. O. Box 1197
Richmond, Virginia 23209

Ellyn R. Weiss, Esq.
Harmon, Weiss and Jordan
2001 S Street NW
Washington, DC 20009

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

Mr. Anthony Gambardella
Office of the Attorney General
Supreme Court Building
101 North 8th Street
Richmond, Virginia 23219

Resident Inspector/North Anna
c/o U.S. NRC
Senior Resident Inspector
Route 2, Box 78
Mineral, Virginia 23117

Mrs. Margaret Dietrich
Route 2, Box 568
Gordonsville, Virginia 22042

Mr. Paul W. Purdom
Environmental Studies Institute
Drexel University
32nd and Chestnut Streets
Philadelphia, Pennsylvania 19104

Atomic Safety and Licensing Appeal
Board Panel
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Regional Administrator
USNRC, Region II
Office of Executive Director
for Operations
101 Marietta Street N.W., Suite 2900
Atlanta, Georgia 30323

Mr. E. W. Harrell
P. O. Box 402
Mineral, Virginia 23117

Old Dominion Electric Cooperative
c/o Executive Vice President
Innsbrook Corporate Center
4222 Cox Road, Suite 102
Glen Allen, Virginia 23060

Mr. Richard C. Klepper
Board of Supervisors
Louisa County Courthouse
P. O. Box 27
Louisa, Virginia 23093

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

VIRGINIA ELECTRIC AND POWER COMPANY

OLD DOMINION ELECTRIC COOPERATIVE

DOCKET NO. 50-338

NORTH ANNA POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 64
License No. NPF-4

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

   A. The application for amendment by Virginia Electric and Power Company, et al., (the licensee) dated June 3 as supplemented June 9, 1983, 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.

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P PDR

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.D.(2) of Facility Operating License No. NPF-4 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 64, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective within 7 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Edward J. Butcher, Acting Chief
Operating Reactors Branch #3
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 28, 1985

ATTACHMENT TO LICENSE AMENDMENT NO. 64

TO FACILITY OPERATING LICENSE NO. NPF-4

DOCKET NO. 50-338

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages as indicated. The revised pages are identified by amendment number and contain vertical lines indicating the area of change. The corresponding overleaf pages are also provided to maintain document completeness.

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3/4.3.3 MONITORING INSTRUMENTATION

RADIATION MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.1 The radiation monitoring instrumentation channels shown in Table 3.3-6 shall be OPERABLE with their alarm/trip setpoints within the specified limits.

APPLICABILITY: As shown in Table 3.3-6.

ACTION:

a. With a radiation monitoring channel alarm/trip setpoint exceeding the value shown in Table 3.3-6, adjust the setpoint to within the limit within 4 hours or declare the channel inoperable.

b. With one or more radiation monitoring channels inoperable, take the ACTION shown in Table 3.3-6.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.1 Each radiation monitoring instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations during the modes and at the frequencies shown in Table 4.3-3.

TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
1. AREA MONITORS					
a. Fuel Storage Pool Area					
i. Criticality Monitor #	1	*	$\leq$ 15 mR/hr	10^{-4} - 10^{+1} R/hr	19
b. Containment					
i. Purge & Exhaust Isolation	1	6	$\leq$ 50 mR/hr	10^{-4} - 10^{+1} R/hr	22
ii. High Range Area	2	1,2,3,&4	$\leq$ $1.6 \times 10^{+5}$ R/hr	10^{0} - 10^{+7} R/hr	35
2. PROCESS MONITORS					
a. Ventilation Vent #					
i. Gaseous Gross Activity	1	**	$\leq$ 1×10^{-5} µCi/ml	10 - 10^{6} cpm	21
ii. Particulate Gross Activity	1	**	$\leq$ 2×10^{-9} µCi/ml	10 - 10^{6} cpm	21
b. Containment					
i. Gaseous Activity					
a) Purge & Exhaust Isolation	1	6	$\leq$ 3.6×10^{3} cpm	10 - 10^{6} cpm	22
b) RCS Leakage Detection	1	1, 2, 3 & 4	N/A	10 - 10^{6} cpm	20
ii. Particulate Activity					
a) Purge & Exhaust Isolation	1	6	$\leq$ 1×10^{5} cpm	10 - 10^{6} cpm	22
b) RCS Leakage Detection	1	1, 2, 3 & 4	N/A	10 - 10^{6} cpm	20

* With fuel in the storage pool or building
** With irradiated fuel in the storage pool
\# Common to Unit 1 and Unit 2

TABLE 3.3-6 (continued)

RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
2. PROCESS MONITORS (Cont'd)					
c. Noble Gas High Range Effluent Monitors					
i. Ventilation Vent #	1	1,2,3, & 4	Hi $5x10^2$ Hi Hi 10^3	$5x10^{-7}$-10^{+5}µCi/cc	35
ii. Process Vent #	1	1,2,3, & 4	Hi $5x10^4$ Hi Hi 10^5	$5x10^{-7}$-10^{+5}µCi/cc	35
iii. Main Steam ##	1/loop	1,2,3, & 4	Hi .26 mr/hr Hi Hi 5.14 mr/hr	10^{-2}-10^{+7} mr/hr	35
iv. Auxiliary Feedwater Pump Turbine Exhaust	1	1,2,3, & 4	Hi 0.2 mr/hr Hi Hi 4.03 mr/hr	10^{-2}-10^{+7} mr/hr	35

Common to Unit 1 and Unit 2.
Main steam release path includes safety valves, atmospheric steam dump valves and the decay heat release path.

TABLE 3.3-6 (Continued)

TABLE NOTATION

ACTION 19 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, perform area surveys of the monitored area with portable monitoring instrumentation at least once per 24 hours.

ACTION 20 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.6.1.

ACTION 21 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.12.

ACTION 22 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.9.

ACTION 35 - With the number of OPERABLE channels less than required by the Minimum Channels OPERABLE requirement, either restore the inoperable channel(s) to OPERABLE status within 72 hours, or:

1. Initiate the preplanned alternate method of monitoring the appropriate parameter(s), and

2. Prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 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 status.

TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. AREA MONITORS				
a. Fuel Storage Pool Area				
i. Criticality Monitor #	S	R	M	*
b. Containment				
i. Purge & Exhaust Isolation	S	R	M	6
ii. High Range Area	S	R	M	1, 2, 3, & 4
2. PROCESS MONITORS				
a. Ventilation Vent #				
i. Gaseous Gross Activity	S	R	M	**
ii. Particulate Gross Activity	S	R	M	**
b. Containment				
i. Gaseous Activity				
a)Purge & Exhaust Isolation	S	R	M	6
b)RCS Leakage Detection	S	R	M	1, 2, 3, & 4
ii. Particulate Activity				
a)Purge & Exhaust Isolation	S	R	M	6
b)RCS Leakage Detection	S	R	M	1, 2, 3, & 4

*With fuel in the storage pool or building
**With irradiated fuel in the storage pool
#Common to Unit 1 and Unit 2

TABLE 4.3-3 (Continued)

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
2. PROCESS MONITORS (Cont'd)				
c) Noble Gas High Range Effluent Monitors				
i. Ventilation Vent #	S	R	M	1,2,3 & 4
ii. Process Vent #	S	R	M	1,2,3 & 4
iii. Main Steam ##	S	R	M	1,2,3 & 4
iv. Auxiliary Feedwater Pump Turbine Exhaust	S	R	M	1,2,3 & 4

Common to Unit 1 and Unit 2.

Main steam release path includes the safety valves, atmospheric steam dump valves, and the decay heat release path.

ACCIDENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.6 The accident monitoring instrumentation channels shown in Table 3.3-10 shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

a. With the number of OPERABLE accident monitoring channels less than the total number of channels shown in Table 3.3-10, either restore the inoperable channel(s) to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours.

b. With the number of OPERABLE accident monitoring instrumentation channels less than the MINIMUM CHANNELS OPERABLE requirements of Table 3.3-10, either restore the inoperable channel(s) to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 12 hours.

c. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.6 Each accident monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-7.

TABLE 3.3-10

ACCIDENT MONITORING INSTRUMENTATION

		TOTAL NO. OF CHANNELS	MINIMUM CHANNELS OPERABLE
1.	Containment Pressure	2	1
2.	Reactor Coolant Inlet Temperature-T_{hot} (wide range)	2	1
3.	Reactor Coolant Inlet Temperature-T_{cold} (wide range)	2	1
4.	Reactor Coolant Pressure-Wide Range	1	1
5.	Pressurizer Water Level	1	1
6.	Steam Line Pressure	2/steam generator	1/steam generator
7.	Steam Generator Water Level-Narrow Range	2/steam generator	1/steam generator
8.	Refueling Water Storage Tank Water Level	1	1
9.	Boric Acid Tank Solution Level	1	1
10.	Auxiliary Feedwater Flow Rate	1/steam generator	1/steam generator
11.	Reactor Coolant System Subcooling Margin Monitor	2	1
12.	PORV Position Indicator	2/valve	1/valve
13.	PORV Block Valve Position Indicator	1/valve	1/valve
14.	Safety Valve Position Indicator	1/valve	1/valve
15.	Reactor Vessel Coolant Level Monitor	2	1
16.	Containment Water Level (narrow range)	2	1
17.	Containment Water Level (wide range)	2	1

TABLE 4.3-7

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION
1. Containment Pressure	M	R
2. Reactor Coolant Inlet Temperature-T_{hot} (wide range)	M	R
3. Reactor Coolant Inlet Temperature-T_{cold} (wide range)	M	R
4. Reactor Coolant Pressure-Wide Range	M	R
5. Pressurizer Water Level	M	R
6. Steam Line Pressure	M	R
7. Steam Generator Water Level-Narrow Range	M	R
8. Refueling Water Storage Tank Water Level	M	R
9. Boric Acid Tank Solution Level	M	R
10. Auxiliary Feedwater Flow Rate	M	R
11. Reactor Coolant System Subcooling Margin Monitor	M	R
12. PORV Position Indicator	M	R
13. PORV Block Valve Position Indicator	M	R
14. Safety Valve Position Indicator	M	R
15. Reactor Vessel Coolant Level Monitor	M	R
16. Containment Water Level (narrow range)	M	R
17. Containment Water Level (wise range)	M	R

INSTRUMENTATION

FIRE DETECTION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.7 As a minimum, the fire detection instrumentation for each fire detection zone shown in Table 3.3-11 shall be OPERABLE.

APPLICABILITY: Whenever equipment in that fire detection zone is required to be OPERABLE.

ACTION:

With one or more of the fire detection instrument(s) shown in Table 3.3-11 inoperable:

a. Within 1 hour establish a fire watch patrol to inspect the zone(s) with the inoperable instrument(s) at least once per hour, and

b. Restore the inoperable instrument(s) to OPERABLE status within 14 days or prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 30 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the instrument(s) to OPERABLE status.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.7.1 Each of the above required fire detection instruments shall be demonstrated OPERABLE at least once per 6 months by performance of a CHANNEL FUNCTIONAL TEST.

4.3.3.7.2 The NFPA Code 72D supervised circuits supervision associated with the detector alarms of each of the above required fire detection instruments shall be demonstrated OPERABLE at least once per 6 months.

4.3.3.7.3 The non-supervised circuits between the local panels in Specification 4.3.3.7.2 and the control room shall be demonstrated OPERABLE at least once per 31 days.

3/4.4.11 REACTOR VESSEL HEAD VENT

LIMITING CONDITION FOR OPERATION

3.4.11.1 At least two Reactor Vessel Head Vent (RVHV) paths consisting of two isolation valves powered from emergency buses shall be OPERABLE and closed.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

a. With one of the above RVHV paths 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.

b. With two RVHV paths inoperable, maintain the inoperable vent paths closed with power removed from the valve actuators of all the 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.

c. If any RVHV isolation valve cannot be verified to be closed within 72 hours, be in HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.11.1 Each RVHV path isolation valve not required to be closed above shall be demonstrated OPERABLE by:

a. Exercising each remotely controlled valve through one cycle from the control room pursuant to Specification 4.0.5.

4.4.11.2 Each RVHV path shall be demonstrated OPERABLE following each refueling by:

a. Verifying that the upstream manual isolation valve is locked in the opened position.

b. Verifying flow through the RVHV paths during system venting.

3/4.6.4 COMBUSTIBLE GAS CONTROL

HYDROGEN ANALYZERS

LIMITING CONDITION FOR OPERATION

3.6.4.1 Two independent containment hydrogen analyzers (shared with Unit 2) shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

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 OPERABILITY of the respective Heat Tracing System.

SURVEILLANCE REQUIREMENTS

4.6.4.1 Each hydrogen analyzer shall be demonstrated OPERABLE at least once per 92 days on a STAGGERED TEST BASIS by performing a CHANNEL CALIBRATION using sample gas containing:

a. One volume percent (±.25%) hydrogen, balance nitrogen, and

b. Four volume percent (±.25%) hydrogen, balance nitrogen.

NOTE: The Channel Calibration Test shall include startup and operation of the Heat Tracing System.

ELECTRIC HYDROGEN RECOMBINERS

LIMITING CONDITION FOR OPERATION

3.6.4.2 Two separate and independent containment hydrogen recombiner systems (shared with Unit 2) shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

With one hydrogen recombiner system inoperable, restore the inoperable system to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.6.4.2 Each hydrogen recombiner system shall be demonstrated OPERABLE:

a. At least once per 6 months by verifying during a recombiner system functional test that the minimum heater sheath temperature increases to $\geq$ 700°F within 90 minutes and is maintained for at least 2 hours and that each purge blower operates for 15 minutes.

b. At least once per 18 months by:

1. Performing a CHANNEL CALIBRATION of all recombiner instrumentation and control circuits.

2. Verifying through a visual examination that there is no evidence of abnormal conditions within the recombiner (i.e., loose wiring or structural connections, deposits of foreign materials, etc.).

3. Verifying during a recombiner system functional test using containment atmospheric air at a flow rate of $\geq$ 50 scfm, that the heater temperature increases to $\geq$ 1100°F within 5 hours and is maintained for at least 4 hours.

4. Verifying the integrity of all heater electrical circuits by performing a continuity and resistance to ground test following the above required functional test. The resistance to ground for any heater phase shall be $\geq$ 10,000 ohms.

3/4.4.11 REACTOR VESSEL HEAD VENT

The accumulation of non-condensible gases in the Reactor Coolant System may result from sudden system depressurization, accumulator discharges and/or inadequate core cooling conditions. The function of the Reactor Vessel Head Vent (RVHV) is to remove non-condensible gases from the reactor vessel head. The RVHV is designed with redundant safety grade vent paths.

Venting of non-condensible 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.

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

VIRGINIA ELECTRIC AND POWER COMPANY

OLD DOMINION ELECTRIC COOPERATIVE

DOCKET NO. 50-339

NORTH ANNA POWER STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 49
License No. NPF-7

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

   A. The application for amendment by Virginia Electric and Power Company, et al., (the licensee) dated June 3 as supplemented June 9, 1983, 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 2.C.(2) of Facility Operating License No. NPF-7 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 49 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective within 7 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Edward J. Butcher, Acting Chief
Operating Reactors Branch #3
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 28, 1985

ATTACHMENT TO LICENSE AMENDMENT NO. 49

TO FACILITY OPERATING LICENSE NO. NPF-7

DOCKET NO. 50-339

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages as indicated. The revised pages are identified by amendment number and contain vertical lines indicating the area of change. The corresponding overleaf pages are also provided to maintain document completeness.

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TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
1. AREA MONITORS					
a. Fuel storage Pool Area Criticality Monitor #	1	*	$\leq$ 15 mR/hr	10^{-4} - 10^{+1} R/hr	22
b. Containment					
i. Purge & Exhaust Isolation	1	6	$\leq$ 50 mR/hr	10^{-4} - 10^{+1} R/hr	25
ii. High Range Area	2	1,2,3, & 4	$\leq$ $1.6 \times 10^{+3}$ R/hr	10^{0} - 10^{+7} R/hr	35
2. PROCESS MONITORS					
a. Ventilation Vent #					
i. Gaseous Gross Activity	1	**	$\leq$ 1×10^{-5} μCi/ml	10 - 10^{6} cpm	24
ii. Particulate Gross Activity	1	**	$\leq$ 2×10^{-9} μCi/ml	10 - 10^{6} cpm	24
b. Containment					
i. Gaseous Activity					
a) Purge & Exhaust Isolation	1	6	$\leq$ 3.6×10^{3} cpm	10 - 10^{6} cpm	25
b) RCS Leakage Detection	1	1,2,3, & 4	N/A	10 - 10^{6} cpm	23
ii. Particulate Activity					
a) Purge & Exhaust Isolation	1	6	$\leq$ 1×10^{5} cpm	10 - 10^{6} cpm	25
b) RCS Leakage Detection	1	1,2,3, & 4	N/A	10 - 10^{6} cpm	23

* With fuel in the storage pool or building
** With irradiated fuel in the storage pool
\# Common to Unit 1 and Unit 2

TABLE 3.3-6 (Continued)

RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
2. PROCESS MONITORS (cont'd)					
c. Noble Gas High Range Effluent Monitors					
i. Ventilation Vent #	1	1,2,3, & 4	Hi $5x10^2$ Hi Hi 10^3	$5x10^{-7}$-10^{+5} μCi/cc	35
ii. Process Vent #	1	1,2,3, & 4	Hi $5x10^4$ Hi Hi 10^5	$5x10^{-7}$-10^{+5} μCi/cc	35
iii. Main Steam ##	1/loop	1,2,3, & 4	Hi .26 mr/hr Hi Hi 5.14 mr/hr	10^{-2}-10^{+7} Mr/hr	35
iv. Auxiliary Feedwater Pump Turbine Exhaust	1	1,2,3, & 4	Hi 0.2 mr/hr Hi Hi 4.03 mr/hr	10^{-2}-10^{+7} mr/hr	35

Common to Unit 1 and Unit 2.

Main steam release path includes safety valves, atmospheric steam dump valves and the decay heat release path.

TABLE 3.3-6 (Continued)

TABLE NOTATION

ACTION 22 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, perform area surveys of the monitored area with portable monitoring instrumentation at least once per 24 hours.

ACTION 23 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.6.1.

ACTION 24 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.12.

ACTION 25 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.9.

ACTION 35 - With the number of OPERABLE channels less than required by the Minimum Channels OPERABLE requirement, either restore the inoperable channel(s) to OPERABLE status within 72 hours, or:

1. Initiate the preplanned alternate method of monitoring the appropriate parameter(s), and

2. Prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 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 status.

TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. AREA MONITORS				
a. Fuel Storage Pool Area Criticality Monitor #	S	R	M	*
b. Containment				
i. Purge & Exhaust Isolation	S	R	M	6
ii. High Range Area	S	R	M	1, 2, 3, & 4
2. PROCESS MONITORS				
a. Ventilation Vent #				
i. Gaseous Gross Activity	S	R	M	**
ii. Particulate Gross Activity	S	R	M	**
b. Containment				
i. Gaseous Activity				
a) Purge & Exhaust Isolation	S	R	M	6
b) RCS Leakage Detection	S	R	M	1, 2, 3, & 4
ii. Particulate Activity				
a) Purge & Exhaust Isolation	S	R	M	6
b) RCS Leakage Detection	S	R	M	1, 2, 3, & 4

* With fuel in the storage pool or building
** With irradiated fuel in the storage pool
\# Common to Unit 1 and Unit 2

TABLE 4.3-3 (Continued)

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
2. PROCESS MONITORS (Cont'd)				
c) Noble Gas High Range Effluent Monitors				
i. Ventilation Vent #	S	R	M	1, 2, 3, & 4
ii. Process Vent #	S	R	M	1, 2, 3, & 4
iii. Main Steam ##	S	R	M	1, 2, 3, & 4
iv. Auxiliary Feedwater Pump Turbine Exhaust	S	R	M	1, 2, 3, & 4

Common to Unit 1 and Unit 2.

Main steam release path includes the safety valves, atmospheric steam dump valves, and the decay heat release path.

INSTRUMENTATION

MOVABLE INCORE DETECTORS

LIMITING CONDITION FOR OPERATION

3.3.3.2 The movable incore detection system shall shall be OPERABLE with:

a. At least 75% of the detector thembles,

b. A minimum of 2 detector thimbles per core quadrant, and

c. Sufficient movable detectors, drives, and readout equipment to map these thimbles.

APPLICABILITY:

When the movable incore detection system is used for:

a. Recalibration of the ecore neutron flux detection system,

b. Monitoring the Quadrant POWER TILT RATIO, or

c. Measurement of $F^N_{\Delta H}$, $F_Q(Z)$ and F_{xy} (Z)

ACTION:

With the movable incore detection system inoperable, do not use the system for the above applicable monitoring or calibration functions. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.2 The movable incore detection system shall be demonstrated OPERABLE, at least once per 24 hours, by normalizing each detector output to be used during its use when required for:

a. Recalibration of the excore neutron flux detection system, or

b. Monitoring the QUADRANT POWER TILT RATIO, or

c. Measurement of $F^N_{\Delta H}$, $F_Q(Z)$ and F_{xy} (Z)

TABLE 3.3-10

ACCIDENT MONITORING INSTRUMENTATION

		TOTAL NO. OF CHANNELS	MINIMUM CHANNELS OPERABLE
1.	Containment Pressure	2	1
2.	Reactor Coolant Outlet Temperature-T_{hot} (wide range)	2	1
3.	Reactor Coolant Inlet Temperature-T_{cold} (wide range)	2	1
4.	Reactor Coolant Pressure-Wide Range	1	1
5.	Pressurizer Water Level	1	1
6.	Steam Line Pressure	2/steam generator	1/steam generator
7.	Steam Generator Water Level-Narrow Range	2/steam generator	1/steam generator
8.	Refueling Water Storage Tank Water Level	1	1
9.	Boric Acid Tank Solution Level	1	1
10.	Auxiliary Feedwater Flow Rate	1/steam generator	1/steam generator
11.	Reactor Coolant System Subcooling Margin Monitor	2	1
12.	PORV Position Indicator	2/valve	1/valve
13.	PORV Block Valve Position Indicator	1/valve	1/valve
14.	Safety Valve Position Indicator	1/valve	1/valve
15.	Reactor Vessel Coolant Level Monitor	2	1
16.	Containment Water Level (narrow range)	2	1
17.	Containment Water Level (wide range)	2	1

TABLE 4.3-7

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION
1. Containment Pressure	M	R
2. Reactor Coolant Outlet Temperature-T_{hot} (wide range)	M	R
3. Reactor Coolant Inlet Temperature-T_{cold} (wide range)	M	R
4. Reactor Coolant Pressure-Wide Range	M	R
5. Pressurizer Water Level	M	R
6. Steam Line Pressure	M	R
7. Steam Generator Water Level-Narrow Range	M	R
8. Refueling Water Storage Tank Water Level	M	R
9. Boric Acid Tank Solution Level	M	R
10. Auxiliary Feedwater Flow Rate	M	R
11. Reactor Coolant System Subcooling Margin Monitor	M	R
12. PORV Position Indicator	M	R
13. PORV Block Valve Position Indicator	M	R
14. Safety Valve Position Indicator	M	R
15. Reactor Vessel Coolant Level Monitor	M	R
16. Containment Water Level (narrow range)	M	R
17. Containment Water Level (wide range)	M	R

3/4.4.11 REACTOR VESSEL HEAD VENT

LIMITING CONDITION FOR OPERATION

3.4.11.1 At least two Reactor Vessel Head Vent (RVHV) paths consisting of two isolation valves powered from emergency buses shall be OPERABLE and closed.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

a. With one of the above RVHV paths 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.

b. With two RVHV paths inoperable, maintain the inoperable vent paths closed with power removed from the valve actuators of all the 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.

c. If any RVHV isolation valve cannot be verified to be closed within 72 hours, be in HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.11.1 Each RVHV path isolation valve not required to be closed above shall be demonstrated OPERABLE by:

a. Exercising each remotely controlled valve through one cycle from the control room pursuant to Specification 4.0.5.

4.4.11.2 Each RVHV path shall be demonstrated OPERABLE following each refueling by:

a. Verifying that the upstream manual isolation valve is locked in the opened position.

b. Verifying flow through the RVHV paths during system venting.

3/4.6.4 COMBUSTIBLE GAS CONTROL

HYDROGEN ANALYZERS

LIMITING CONDITION FOR OPERATION

3.6.4.1 Two independent containment hydrogen analyzers (shared with Unit 1) shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

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 OPERABILITY of the respective Heat Tracing System.

SURVEILLANCE REQUIREMENTS

4.6.4.1 Each hydrogen analyzer shall be demonstrated OPERABLE at least once per 92 days on a STAGGERED TEST BASIS by performing a CHANNEL CALIBRATION using sample gas containing:

a. One volume percent (± .25%) hydrogen, balance nitrogen, and

b. Four volume percent (± .25%) hydrogen, balance nitrogen.

NOTE: The Channel Calibration Test shall include startup and operation of the Heat Tracing System.

3/4.4.11 REACTOR VESSEL HEAD VENT

The accumulation of non-condensible gases in the Reactor Coolant System may result from sudden system depressurization, accumulator discharges and/or inadequate core cooling conditions. The function of the Reactor Vessel Head Vent (RVHV) is to remove non-condensible gases from the reactor vessel head. The RVHV is designed with redundant safety grade vent paths.

Venting of non-condensible 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.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 64 AND 49 TO

FACILITY OPERATING LICENSE NOS. NPF-4 AND NPF-7

VIRGINIA ELECTRIC AND POWER COMPANY

OLD DOMINION ELECTRIC COOPERATIVE

NORTH ANNA POWER STATION, UNITS NO. 1 AND NO. 2

DOCKET NOS. 50-338 AND 50-339

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 these items in Generic Letter 83-37 which 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 June 3 and June 9, 1983, the Virginia Electric and Power Company, (the licensee) responded to Generic Letter 83-37 by submitting Technical Specification (TS) change requests for North Anna, Units No. 1 and No. 2. This evaluation covers the following TMI Action Plan items:

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

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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. 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 Generic Letter 83-37. We conclude that the TSs for Item II.F.1.1 are acceptable.

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

   The licensee has installed two in-containment monitors in each North Anna 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 Generic Letter 83-37. We conclude that the proposed TSs for Item II.F.1.3 are acceptable.

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

   Each North Anna 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.

5. 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 guidelines contained in Generic Letter 83-37. We conclude that the proposed TSs for containment water level monitors are acceptable.

6. 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 North Anna 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.

7. 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. The licensee indicated that all hardware modifications are completed. However, the licensee has submitted TSs for the reactor coolant inventory tracking system only. The TSs for the subcooling margin monitors and core exit thermocouples are to be submitted at a later date. We have reviewed the proposed TSs for the reactor coolant inventory tracking system (denoted as North Anna Power Station Reactor Vessel Level Instrumentation System by VEPCO) and conclude that the proposed TSs are acceptable as it meets the intent of our guidance contained in Generic Letter 83-37.

ENVIRONMENTAL CONSIDERATION

These amendments involve a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the 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 occupational radiation exposure. The Commission has previously published 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 §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 the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Date: June 28, 1984

Principal Contributor:
Chando Patel