

REQUEST TO CHANGE PROCEDURE  
NORTH ANNA POWER STATION  
VIRGINIA POWER

ADM-5.4  
Attachment 3  
Page 1 of 1  
07-09-87

1 SUPERVISOR RESPONSIBLE FOR FOLLOWING PROCEDURE:

- |   |  |   |                                  |
|---|--|---|----------------------------------|
| <input type="checkbox"/> ABNORMAL       | <input type="checkbox"/> CURVE BOOK            | <input type="checkbox"/> OPERATING      | <input type="checkbox"/> WELDING |
| <input type="checkbox"/> ADMINISTRATIVE | <input type="checkbox"/> EMERGENCY             | <input type="checkbox"/> PERIODIC TEST  | <input type="checkbox"/> _____   |
| <input type="checkbox"/> ANNUNCIATOR    | <input type="checkbox"/> IN-SERVICE INSPECTION | <input type="checkbox"/> HEALTH PHYSICS | <input type="checkbox"/> _____   |
| <input type="checkbox"/> CALIBRATION    | <input type="checkbox"/> MAINTENANCE           | <input type="checkbox"/> SPECIAL TEST   | <input type="checkbox"/> _____   |
| <input type="checkbox"/> CHEMISTRY      | <input type="checkbox"/> NON-DESTRUCTIVE TEST  | <input type="checkbox"/> START-UP TEST  | <input type="checkbox"/> _____   |

PROCEDURE NO: 1-AP-24.1 2 UNIT NO: 1 3 REVISION DATE: 1-31-85

TITLE: LARGE STEAM GENERATOR TUBE LEAK REQUIRING IMMEDIATE AND RAPID UNIT SHUTDOWN

CHANGES REQUESTED: (GIVE STEP NUMBER, EXACT SUGGESTED WORDING, AND LIST REFERENCES, STAPLE COPY OF PROCEDURE WITH SUGGESTED CHANGES MARKED TO THIS FORM.)

ADDED MAIN STEAM HEADER N-16 RAD MONITOR TO INDICATIONS  
ADDED REFERENCE TO STANDING ORDER #155 FOR RAMP DOWN  
CHANGE SG PORV SETPOINT TO 10.25 PSIG

REFERENCES:

ENR - 87-569, STANDING ORDER #155

REASON FOR CHANGES:

N-16 RAD monitor added to system

7 CHANGE REQUESTED BY:

*Blum*

8 DATE: 10-8-87

ACTION TAKEN:

DOES THIS CHANGE THE OPERATING METHODS AS DESCRIBED IN THE UPSAR? ☐ YES ☒ NO  
DOES THIS CHANGE INVOLVE A CHANGE TO THE TECH. SPECS? ☐ YES ☒ NO  
DOES THIS CHANGE INVOLVE A POSSIBLE UNREVIEWED SAFETY QUESTION? ☐ YES ☒ NO  
IF ALL "NO", NO "SAFETY ANALYSIS" IS REQUIRED. IF ANY "YES", A "SAFETY ANALYSIS" IS REQUIRED.  
(10CFR50.59) APPROVED COPY TO BE PROVIDED TO LICENSING COORD. FOR INCLUSION IN ANNUAL REPORT.

RECOMMENDED ACTION:

☒ APPROVED ☐ DISAPPROVED

DOES THIS PROCEDURE CREATE A  
QA DOCUMENT? YES ☒ NO ☐

BY: (COGNIZANT SUPERVISOR)

*R. H. H.*

12 DATE: 10-8-87

REVIEWED BY QUALITY ASSURANCE:

CHANGES MADE: YES ☐ NO ☒

BY:

*Miss G. H.*

15 DATE: 10/8/87

REVIEWED BY STATION NUCLEAR SAFETY AND OPERATING COMMITTEE:

☒ APPROVED ☐ DISAPPROVED

☐ APPROVED AS MODIFIED BY COMMITTEE

MAN SIGNATURE:

*AK*

18 DATE: 10/8/87

NEW PROCEDURE REVISION DATE:

ACTION COMPLETED BY:

21 DATE: 10/16/87

9203030463 910819  
PDR FOIA  
WILLIAM91-106 PDR

9203030463

VIRGINIA POWER  
NORTH ANNA POWER STATION  
UNIT 1

LARGE STEAM GENERATOR TUBE LEAK

1.0 Purpose

This procedure will provide the indications of, probable causes for and immediate and long term operator actions to be taken for steam generator tube leaks.

- 24.1 Large steam generator tube leak, requiring immediate and rapid unit shutdown.
- 24.2 Small generator tube leak.

VIRGINIA POWER  
NORTH ANNA POWER STATION  
UNIT 1

LARGE STEAM GENERATOR TUBE LEAK REQUIRING IMMEDIATE AND RAPID UNIT SHUTDOWN  
(With No Attachments)

REFERENCES:

1. UFSAR Chapter
2. 11715-FM-70A, 70B
3. EWR-87-562

REV. NO. 5 PAGE \_\_\_\_\_ DATE 00-00-00 APPROVAL \_\_\_\_\_

RECOMMEND APPROVAL: \_\_\_\_\_

APPROVED BY: \_\_\_\_\_  
CHAIRMAN STATION NUCLEAR SAFETY  
AND OPERATING COMMITTEE

DATE: 00-00-00

1.0 Purpose

- 1.1 This procedure provides the indications of, probable causes for, and the immediate and long term operator actions to be taken in the event of a large steam generator tube leak requiring a immediate and rapid unit shutdown.

2.0 Indications

- 2.1 Increased Charging flow  
2.2 VCT low level  
2.3 Radiation Monitors  
2.3.1 Condenser Air Ejector  
2.3.2 Steam Generator Blowdown  
2.3.3 Main Steamline  
2.3.4 Main Steam Header N-16

3.0 Probable-Causes

- 3.1 Large steam generator tube leak

4.0 Immediate Operator Action

- 4.1 IF required, start a second Charging pump.  
4.2 Notify the SRO of the affected unit.

Initials

5.0 Long Term Operator Actions

NOTE: IF at ANY time during this procedure a Reactor Trip occurs, THEN immediately go to 1-EP-0, REACTOR TRIP OR SAFETY INJECTION.

\_\_\_\_\_ 5.1 Commence a unit ramp down as per 1-OP-2.2 at a rate determined by the SRO and in accordance with Standing Order #155 while continuing with this procedure.

\_\_\_\_\_ 5.2 Attempt to identify the affected SG while continuing with this procedure.

\*SGBD Radiation Monitors

\*Main Steamline Radiation Monitors

\*Main Steam Header N-16 Radiation Monitor

\*Steam Flow - Feed Flow mismatch

\*Main Feed Reg Valve position

\_\_\_\_\_ 5.3 Notify Chemistry AND Health Physics to sample SGs for activity, THEN isolate ALL SGBD sample purge lines.

\_\_\_\_\_ 5.4 Dispatch an operator to the Auxiliary Building to isolate SGBD from ALL SGs at the Blowdown Tanks.

\_\_\_\_\_ A SG Close 1-BD-9.

\_\_\_\_\_ B SG Close 1-BD-18.

\_\_\_\_\_ C SG Close 1-BD-27.

\_\_\_\_\_ 5.5 Energize PRZR heater as required to maintain PRZR pressure.

\_\_\_\_\_ 5.6 Maintain PRZR level:

\*Start standby Charging pump.

\*Increase Charging flow.

\*Isolate letdown.

\_\_\_\_\_ 5.7 Place Auxiliary Steam on unaffected unit or Auxiliary Boilers.

\_\_\_\_\_ 5.8 Notify the unaffected Unit to initiate 1-AP-47, UNIT OPERATION  
DURING OPPOSITE UNIT EMERGENCY.

\_\_\_\_\_ 5.9 Dispatch an operator to place ALL Turbine Building sumps pumps  
in OFF.

NOTE: IF the affected SG is NOT identified, THEN continue with this  
procedure AND perform Step 5.10 when it IS identified.

5.10 Verify affected SG identified, THEN:

\_\_\_\_\_ 5.10.1 Dispatch an operator to the MSVH to isolate steam from  
the affected SG to the Turbine Drive AFW pump:

\_\_\_\_\_ A SG 1-MS-18

\_\_\_\_\_ B SG 1-MS-57

\_\_\_\_\_ C SG 1-MS-95

\_\_\_\_\_ 5.10.2 Increase the setpoint for the affected SG PORV to 1025  
psig (potentiometer setting at 5.3).

\_\_\_\_\_ 5.11 Determine Cold Shutdown boration requirements (Minimum Boron  
Shutdown Concentration Curve) while continuing with this  
procedure.

\_\_\_\_\_ 5.12 Verify 1-OP-2.2 completed, THEN:

\_\_\_\_\_ 5.12.1 Select the highest IR channel on NR-45.

\_\_\_\_\_ 5.12.2 Open both reactor trip breakers and verify all rods  
fully inserted.

\_\_\_\_\_ 5.12.3 Emergency borate to Cold Shutdown Concentration.



\*\*\*\*\*  
CAUTION: Remember to block Tave SI inputs at 543°F.  
\*\*\*\*\*

\_\_\_\_\_ 5.13 Rapidly cooldown the RCS to less than 500°F by dumping steam.

\_\_\_\_\_ 5.14 Verify RCS temperature is less than 500°F, THEN:

\_\_\_\_\_ 5.14.1 Close the affected SGs MSIV and Bypass valve.  
\*\*\*\*\*

CAUTION: Remember to block Lo PRZR pressure SI inputs at apx  
1990 psig.  
\*\*\*\*\*

CAUTION: Maintain 50°F subcooling at all times.  
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CAUTION: Adjust seal injection as required.  
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\_\_\_\_\_ 5.15 Rapidly depressurize the RCS to a pressure equal to the  
affected SG pressure.

\_\_\_\_\_ 5.16 Verify Source Range unblocked at  $5 \times 10^{-11}$  amps, THEN:

\_\_\_\_\_ 5.16.1 Select highest reading source and IR channels on NR-45.

\_\_\_\_\_ 5.17 Maintain stable plant conditions:

\_\_\_\_\_ 5.17.1 At least 50°F subcooling

\_\_\_\_\_ 5.17.2 RCS pressure equal to affect SG pressure.

5.18 Go to the appropriate POST-SGTR COOLDOWN procedure:

- \_\_\_\_\_ 1-ES-3.1 POST-SGTR COOLDOWN USING BACKFILL.
- \_\_\_\_\_ 1-ES-3.2 POST-SGTR COOLDOWN USING BLOWDOWN.
- \_\_\_\_\_ 1-ES-3.3 POST-SGTR COOLDOWN USING STEAM DUMP.

Completed By: \_\_\_\_\_

Date: \_\_\_\_\_