

VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA POWER STATION
UNIT NO. 1

REACTOR TRIP

NOT A CONTROLLED
DOCUMENT

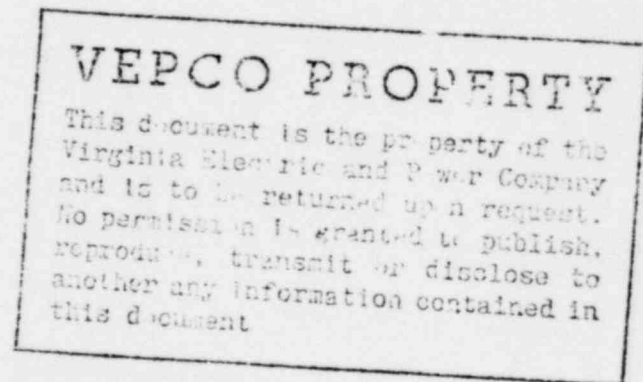
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REFERENCES:

NOR NECESSARILY THE
LATEST REVISION

1. Westinghouse Logics 5655D33 series.
2. 11715-LSK-1.4
3. FSAR, Section 15

REV. NO. 4 PAGE: Entire DATE: 12-04-79 APPROVAL: JK



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RECOMMEND APPROVAL: [Signature]

APPROVED BY: [Signature]

CHAIRMAN STATION NUCLEAR SAFETY
AND OPERATING COMMITTEE

DATE: 12-04-79

SAFETY RELATED

8001140 274

1.0 Indications

- 1.1 The annunciation of any alarm light on the reactor trip first-out portion of panels D or E.
- 1.2 The individual rod position indication system show all full length rods on the bottom.
- 1.3 Reactor trip breakers (Train A & B) indicate open.

2.0 Automatic Actions

- 2.1 Train "A" and "B" reactor trip breakers are opened simultaneously.
- 2.2 Turbine trip by reactor trip (P-4).
- 2.3 The steam generator feedwater regulating valves will control level, until T_{avg} decreases below 554° and then will trip closed (P-4).

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3.0 Immediate Operator Actions

- 3.1 Manually trip the reactor, verify all full length rods are fully inserted and that power level has decreased to ~ zero.

NOTE: If any required automatic action has not occurred, it shall be manually initiated.

NOTE: If the reactor has not tripped following the opening of the Reactor Trip Breakers, manually initiate safety injection.

- 3.2 Manually trip the turbine.

- 3.3 Verify proper operation of the Steam Dump Control Valves or the Steam Generator Power Operated Relief Valves and that Tave is decreasing and/or stabilizing at 547°F.

NOTE: If it is determined that an uncontrolled RCS cooldown is in progress, simultaneously close all three MSTV's.

- 3.4 Verify Main or Auxiliary Feedwater Flow and that Steam Generator levels are recovering.

- 3.5 Verify that pressurizer level is recovering.

- 3.6 Verify that Pressurizer pressure is recovering.

- 3.7 If any of the above parameters are deteriorating (step 3.3 thru 3.6) and/or a Safety Injection is ^{IMMINENT}imminent, proceed to the appropriate EP and request that SRO/STA evaluate the accident utilizing the attached diagnostic checklist. If all parameters are returning to normal, proceed to Section 4.0, Long Term Operator Action.

CAUTION: Do not make operational decisions based solely on a single plant parameter when one or more confirming indications are available.

- 1) EP-2 Loss of Reactor Coolant (high Cont. radiation level)
- 2) EP-3 Loss of Secondary Coolant (rapid increase or decrease in Tave)
- 3) EP-4 Steam Generator Tube Rupture (high air ejector rad. level)
- 4) EP-5 Safety Injection

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Initials

4.0 Long Term Operator Actions

_____ 4.1 Verify all full length rods are fully inserted.

NOTE: Emergency borate 7 minutes for each full length rod not fully inserted.

_____ 4.2 Verify all turbine throttle, governor, reheat stops and intercepts valves closed.

_____ 4.3 Close the "Reheater" inlet valves by pushing the "Reset" push-button on the reheater control panel.

_____ 4.4 Verify all turbine drains open.

_____ 4.5 Verify generator breakers GLT568 and GI02 open.

_____ 4.6 Verify the auto transfer of power from station service to reserve station service transformers not overloaded. (Time delay of 30 seconds except upon thrust bearing or generator trips.)

_____ 4.7 Close and lock 1-CH-217.

_____ 4.8 Control Steam generator level at "NO LOAD" level (33%) on feedwater bypass FCV's or on auxiliary feedwater system. If a main feed pump is running, place the aux feed pumps in "AUTO".

_____ 4.9 Verify steam dump steam pressure control setpoint at 1005 psig (the pot setting should be 71.78%) and shift steam dumps to pressure mode.

_____ 4.10 Stop or verify stopped one main feed pump, the LP heater drain pumps and the HP Heater drain pumps.

_____ 4.11 Isolate auxiliary steam loads and shift auxiliary steam supply from the affected unit as necessary.

_____ 4.12 Determine the cause of the trip, from first-out indication, computer post-trip review, and/or sequence of events recorder, and refer to the appropriate emergency or abnormal procedures.

4.0 Long Term Operator Actions (cont.)

4.13 Verify source range unblock when below P-6 reset at 5×10^{-11} amps.

NOTE: Manual reset of source ranges may be required on a malfunction of an Intermediate Range Channel.

4.14 Initiate reactor shutdown and trip report form.

4.15 Return the emergency borate system to normal as per 1-OP-8.8, if necessary.

4.16 If the unit is to be shutdown for an extended period of time, re-establish a ring bus lineup in the switchyard in accordance with system operators instructions.

4.17 Inform chemistry to perform 1-PT-53.5 (reactor coolant system specific activity and isotopic analysis for iodine) following a trip from above 15% rated thermal reactor power.

4.18 Establish proper load shedding as per 1-OP-26.7.

4.19 Proceed to 1-OP-1.5 or 1-OP-3.2 and re-establish initial conditions as appropriate. If a fast recovery is desired proceed to 1-OP-1.6.

Completed By: _____

Date: _____

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Low Feedwater Pump Discharge Press.

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SRO/STA