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RECIP. NAME RECIPIENT AFFILIATION
JOHNSON, A. Project Directorate I-3

Revised 5/14/93

SUBJECT: Forwards Ginna Nuclear Power Plant EOP, including Rev 7 to
AP-TURB.1, "Turbine Trip W/o RX Trip Required" & Rev 8 to
FR-C.2, "Response to Degraded Core Cooling."

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May 24, 1993

U.S. Nuclear Regulatory Commission
Document Control Desk
Attn: Mr. Allen Johnson
Project Directorate I-3
Washington, D.C. 20555

Subject: Emergency Operating Procedures
R. E. Ginna Nuclear Power Plant
Docket No. 50-244

Gentlemen:

As requested, enclosed are Ginna Station Emergency Operating Procedures.

Very truly yours,


Robert C. Mecredy

Enclosures

c: Mr. Lee Bettenhausen, USNRC, Region 1
Resident Inspector, Ginna Station

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AP-TURB.1 Turbine Trip Without RX Trip Required
FR-C.2 Response To Degraded Core Cooling

EOP:

AP-TURB.1

TITLE:

TURBINE TRIP WITHOUT RX TRIP REQUIRED

REV: 5

PAGE 1 of 10

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23TECHNICAL REVIEWPORC REVIEW DATE 5/6/92RSchubert
PLANT SUPERINTENDENT6/2/92
EFFECTIVE DATE

CATEGORY 1.0

REVIEWED BY: _____

*Superseded pages for Rev.
EOPs 58-244 930604043
5/24/93*

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| EOP: | TITLE: | REV: 5 |
| AP-TURB.1 | TURBINE TRIP WITHOUT RX TRIP REQUIRED | PAGE 2 of 10 |

- A. PURPOSE - This procedure provides the necessary instructions to control the plant following a turbine trip without a reactor trip required.
- B. ENTRY CONDITIONS/SYMPTOMS
 1. ENTRY CONDITIONS - This procedure is entered from:
 - a. AP-CW.1, LOSS OF A CIRC WATER PUMP, or,
 - b. AP-ELEC.1, LOSS OF 12A AND/OR 12B TRANSFORMER, or,
 - c. AP-FW.1, PARTIAL OR COMPLETE LOSS OF MAIN FEEDWATER, or
 - d. AP-TURB.2, AUTOMATIC TURBINE RUNBACK, or,
 - e. AP-TURB.3, TURBINE VIBRATIONS, or,
 - f. AP-TURB.4, LOSS OF CONDENSER VACUUM, when power is less than P-9 and the turbine trips without a Rx trip.
 2. SYMPTOMS - The symptoms of TURBINE TRIP WITHOUT RX TRIP REQUIRED are:
 - a. Annunciator K-1, THRUST BEARING FAILURE, lit, or
 - b. Annunciator K-9, TURBINE BEARING OIL LO PRESS TRIP 6 psi, lit, or
 - c. Annunciator K-10, TURBINE MANUAL TRIP, lit, or
 - d. Annunciator K-17, TURBINE LOW VACUUM TRIP 20" Hg, lit, or
 - e. Annunciator K-18, MAIN FEEDWATER PUMPS TRIPPED, lit, or
 - f. Annunciator K-26, GENERATOR LOCKOUT RELAY, lit, or
 - g. Annunciator K-25, TURBINE OVERSPEED ALERT 1980 RPM, lit, or
 - h. Annunciator F-21, COND HI PRESS 20" HG OR LOSS OF BOTH CIRC WTR PMPS, lit, or
 - i. Annunciator K-3, AMSAC ACTUATED, lit.

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| EOP:
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TURBINE TRIP WITHOUT RX TRIP REQUIRED | REV: 5
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| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|--|--|
| *****
<u>CAUTION</u>
IF, AT ANY TIME DURING THIS PROCEDURE, A REACTOR TRIP OR SI OCCURS, E-0,
REACTOR TRIP OR SAFETY INJECTION, SHALL BE PERFORMED.
***** | | |
| 1 | Verify Turbine Stop Valves -
CLOSED | Manually trip turbine.

IF turbine stop valves can <u>NOT</u> be
closed, <u>THEN</u> close both MSIVs.

IF reactor power greater than 8%
with both MSIVs closed, <u>THEN</u>
manually trip the reactor and go to
E-0, REACTOR TRIP OR SAFETY
INJECTION. |
| *****
<u>CAUTION</u>
PRZR PRESSURE LOW PRESSURE TRIP IS RATE SENSITIVE, THEREFORE, MONITOR
PRESSURE WHEN REDUCING RCS TEMPERATURE.
***** | | |
| <u>NOTE:</u> Automatic rod control is desired, if available. | | |
| 2 | Check Reactor Power: | |
| | a. NIS intermediate ranges -
GREATER THAN 2.5×10^{-6} AMPS

b. Verify control rods driving in
to reduce reactor power in AUTO

c. Borate as necessary to maintain
control rods above rod insertion
limits | a. Go to Step 8.

b. Ensure rod control bank selector
switch in manual and drive rods
in as necessary to reduce
reactor power. |

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| AP-TURB.1 | TURBINE TRIP WITHOUT RX TRIP REQUIRED | PAGE 4 of 10 |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|------|--|---|
| 3 | Establish Shutdown S/G Level Control | |
| | <ul style="list-style-type: none"> a. Place MFW regulating valve controllers in MANUAL b. Control MFW flow as necessary to restore S/G level c. S/G level - TRENDING TO PROGRAM | <ul style="list-style-type: none"> c. Operate MFW bypass valves in MANUAL to restore S/G level. <p><u>IF</u> S/G level can <u>NOT</u> be restored, <u>THEN</u> trip the reactor and go to E-0, REACTOR TRIP OR SAFETY INJECTION.</p> |
| 4 | Verify Proper Operation Of Steam Dump: | |
| | <ul style="list-style-type: none"> a. Verify annunciator G-15, STEAM DUMP ARMED - LIT b. Condenser steam dump operating in AUTO c. Tavg - TRENDING TO 547°F | <ul style="list-style-type: none"> a. Place steam dump mode selector switch to MANUAL. b. <u>IF</u> steam dump <u>NOT</u> available, <u>THEN</u> perform the following: <ul style="list-style-type: none"> 1) Adjust S/G ARV setpoints to 1005 psig and verify proper operation. 2) <u>IF</u> power is greater than 8%, <u>THEN</u> ensure reactor trip and go to E-0, REACTOR TRIP OR SAFETY INJECTION. c. <u>IF</u> Tavg can <u>NOT</u> be controlled, <u>THEN</u> manually trip the reactor and go to E-0, REACTOR TRIP OR SAFETY INJECTION. |



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| EOP:
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TURBINE TRIP WITHOUT RX TRIP REQUIRED | REV: 5
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| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|------|--|--|
| 5 | Check PRZR Pressure -
TRENDING TO 2235 PSIG | <u>IF</u> PRZR pressure can <u>NOT</u> be
controlled, <u>THEN</u> refer to
AP-PRZR.1, ABNORMAL PRESSURIZER
PRESSURE. |
| 6 | Check PRZR Level: | |
| | a. Level - GREATER THAN 13% | a. Perform the following: <ul style="list-style-type: none"> 1) Place loop B cold leg
isolation valve to REGEN Hx
(AOV-427) switch to CLOSE. 2) Place letdown orifice valve
switches to CLOSE (AOV-200A,
AOV-200B, and AOV-202). 3) Verify excess letdown
isolation valve (AOV-310)
closed. 4) Ensure PRZR heaters off. 5) Control charging to restore
PRZR level greater than 13%. 6) <u>WHEN</u> PRZR level greater than
13%, <u>THEN</u> restore letdown. |
| | b. Level - TRENDING TO PROGRAM | b. Increase charging flow as
necessary to restore PRZR level
to program. |

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TURBINE TRIP WITHOUT RX TRIP REQUIRED | REV: 5
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| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|--|--|---|
| <p><u>NOTE:</u> Placing MFW regulating valve controllers in MANUAL will restore automatic control of MFW bypass valves if desired.</p> | | |
| 7 | Check MFW System: | |
| | a. Verify MFW regulating valve bypass valves - OPERATING IN AUTO | a. Place MFW regulating valve bypass valve controllers in AUTO and transfer to bypass control if desired. |
| | b. MFW pumps - BOTH RUNNING | b. Perform the following: <ul style="list-style-type: none"> 1) Verify one MFW pump running. <u>IF NOT</u>, <u>THEN</u> verify both MDAFW pumps running. 2) Go to Step 8. |
| | c. Close one MFW pump discharge valve | |
| | d. Stop selected MFW pump | |
| 8 | Establish Stable Plant Conditions: | |
| | a. Place rod control bank selector in MANUAL | |
| | b. Check Rx power - LESS THAN 2.5×10^{-6} AMPS | b. Return to Step 2. |
| | c. PRZR pressure - BETWEEN 2220 PSIG AND 2260 PSIG | c. Control PRZR heaters and spray as necessary. |
| | d. PRZR level - between 20% and 30% | d. Control charging as necessary. |
| | e. S/G levels - TRENDING TO PROGRAM | e. Control S/G feed flow as necessary. |
| | f. RCS Tav _g - GREATER THAN 540°F | f. Control dumping steam as necessary. <u>IF</u> cooldown continues, <u>THEN</u> close both MSIVs. |

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TURBINE TRIP WITHOUT RX TRIP REQUIRED | REV: 5
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| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|------|--|--|
| | <p><u>NOTE:</u> Maintain Reactor power less than 2%. This is within the capacity of MDAFW pumps.</p> | |
| 9 | Check S/G Feed Flow Status: | |
| | a. Manually start both MDAFW pumps | |
| | b. Verify total AFW flow - GREATER THAN 200 GPM | <p>b. Perform the following:</p> <p>1) Establish MFW flow using MFW regulating valve bypass valves.</p> <p><u>IF</u> MFW <u>NOT</u> available, <u>THEN</u> manually start TDAFW pump and establish flow as necessary.</p> <p>2) Go to Step 10.</p> |
| | c. Verify MFW flow control valves - CLOSED | c. Place A and B MFW regulating and bypass valve controllers in manual at 0% demand. |
| | <ul style="list-style-type: none"> • MFW regulating valves • MFW bypass valves | |
| | d. Close MFW pump discharge valves | |
| | <ul style="list-style-type: none"> • MOV-3977, A MFW pump • MOV-3976, B MFW pump | |
| | e. Stop any running MFW pump | |
| | f. Check S/G level - TRENDING TO 39% | f. Adjust MDAFW pump flow as necessary to restore S/G level. |

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| AP-TURB.1 | TURBINE TRIP WITHOUT RX TRIP REQUIRED | PAGE 8 of 10 |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|--|---|
| <p>*****</p> <p style="text-align: center;"><u>CAUTION</u></p> <p>WHEN FEEDING BOTH S/GS USING ONE MDAFW PUMP, THEN THE SUM OF THE FLOWS TO BOTH S/GS MUST BE LESS THAN 230 GPM.</p> <p>*****</p> | | |
| 10 | <p>Establish Normal AFW Pump Shutdown Alignment:</p> <p>a. Place AFW bypass switches to DEF</p> <p>b. Verify AFW bypass valves - OPERABLE</p> <ul style="list-style-type: none"> • AOV-4480 • AOV-4481 <p>c. Verify the following:</p> <ul style="list-style-type: none"> o Both S/G levels - STABLE OR INCREASING o Total AFW flow - LESS THAN 200 GPM <p>d. Close MDAFW pump discharge valves</p> <ul style="list-style-type: none"> • MOV-4007 • MOV-4008 <p>e. Stop all but one MDAFW pump</p> <p>f. Open AFW discharge crossover valves</p> <ul style="list-style-type: none"> • MOV-4000A • MOV-4000B <p>g. Open AFW bypass valves as necessary to control S/G levels</p> <ul style="list-style-type: none"> • AOV-4480 • AOV-4481 | <p>b. Go to Step 11.</p> <p>c. Continue with Step 11. <u>WHEN</u> conditions met, <u>THEN</u> do Steps 10d through g.</p> |

EOP:

AP-TURB.1

TITLE:

TURBINE TRIP WITHOUT RX TRIP REQUIRED

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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

11 Establish Normal Shutdown Alignment:

a. Check condenser - AVAILABLE

a. Dispatch AO to perform Attachment SD-2.

b. Perform the following as necessary:

- o Open generator disconnects
 - 1G13A71
 - 9X13A73
- o Place voltage regulator to OFF
- o Open turbine drain valves
- o Rotate reheater steam supply controller cam to close valves
- o Place reheater dump valve switches to HAND
- o Stop all but one condensate pump

c. Verify Bus 11A and Bus 11B energized - BOTH BUSSES GREATER THAN 4 KV

c. IF either bus NOT energized, THEN refer to 0-6.9.2, ESTABLISHING AND/OR TRANSFERRING OFFSITE POWER TO BUS 12A/ BUS 12B.

d. Dispatch AO to perform Attachment SD-1

NOTE: Refer to 0-9.3, NRC STATE AND COUNTIES IMMEDIATE NOTIFICATION, for reporting requirements.

12 Notify Higher Supervision

| | | |
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| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|------|--|--|
| 13 | Establish Desired Plant Conditions: | |
| | a. Reactor shutdown - DESIRED | a. <u>IF</u> turbine is to be restored to service, <u>THEN</u> maintain reactor critical and refer to 0-1.2, PLANT FROM HOT SHUTDOWN TO STEADY LOAD. |
| | b. Refer to 0-2.1, NORMAL SHUTDOWN TO HOT SHUTDOWN | |
| | -END- | |

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APPENDIX LIST

- 1) Attachment SD-1
- 2) Attachment SD-2

