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APR 1 0 2003

PSEG Nuclear LLC

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LCR S03-02

U. S. Nuclear Regulatory Commission
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Washington, DC 20555-0001

REQUEST FOR CHANGES TO TECHNICAL SPECIFIATIONS TABLE 3.3-1, REACTOR TRIP SYSTEM INSTRUMENTATION SALEM NUCLEAR GENERATING STATION, UNITS 1 AND 2 FACILITY OPERATING LICENSES DPR-70 AND DPR-75 DOCKET NOS. 50-272 AND 50-311

Gentlemen:

Pursuant to 10 CFR50.90, PSEG Nuclear LLC (PSEG) hereby requests a revision to Table 3.3-1 of the Technical Specifications for the Salem Nuclear Generating Station, Units 1 and 2. In accordance with 10CFR50.91(b)(1), a copy of this submittal has been sent to the State of New Jersey.

As part of the turbine upgrade project, Salem is replacing the rotor and re-blading the high pressure turbine. The pressure taps for transmitters PT505 and PT506 are being relocated from the high pressure turbine to the main steam lines, a few feet upstream of the turbine. The physical work including procedure changes and component calibrations will be performed under the PSEG design change process and 10CFR50.59.

Pressure readings for these transmitters are currently referred to as "Turbine impulse chamber pressure". After the pressure taps are relocated, the pressure readings will be referred to as "Turbine steam line inlet pressure".

The purpose of this License Change Request is to modify the "Condition and Setpoint" description for permissive P-7 to reflect the new location of the pressure transmitters. This request does not alter the current design or function of the P-7 permissive.

PSEG has evaluated the proposed changes in accordance with 10CFR50.91(a)(1), using the criteria in 10CFR50.92(c), and has determined this request involves no significant hazards considerations. An evaluation of the requested change is provided in Attachment 1 to this letter. The marked up Technical Specification pages affected by the proposed changes are provided in Attachment 2.

A001

This proposed change is similar to an amendment issued by the NRC for Beaver Valley on February 24, 2003 (Amendment No. 252 to License No. DPR-66 [TAC No. MB5850] and Amendment No. 132 to License No. NPF-73 [TAC No. MB5851]).

PSEG requests approval of the License Changes by October 6, 2003. The Unit 2 change will be implemented prior to exiting from the 2R13 Refueling Outage (November 6, 2003). The Unit 1 change will be implemented prior to exit from the 1R16 Refueling Outage (May 12, 2004).

This submittal contains no commitments.

Should you have any questions regarding this request, please contact Mr. John Nagle at 856-339-3171.

I declare under penalty of perjury that the foregoing is true and correct.

Sincerely,

Executed on 4/10/03

D. F. Garchow
Vice President – Projects & Licensing

Attachments (2)

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SALEM NUCLEAR GENERATING STATION, UNITS 1 AND 2
FACILITY OPERATING LICENSES DPR-70 AND DPR-75
DOCKET NOS. 50-272 AND 50-311

EVALUATION OF REVISIONS TO THE TECHNICAL SPECIFICATIONS TABLE 3.3-1, "REACTOR TRIP SYSTEM INSTRUMENTATION" CHANGE THE "CONDITION AND SETPOINT" DESCRIPTION FOR THE P-7 PERMISSIVE TO REFLECT RELOCATION OF TURBINE PRESSURE TRANSMITTERS

REQUEST FOR CHANGE TO TECHNICAL SPECIFICATIONS TABLE 3.3-1, "REACTOR TRIP SYSTEM INSTRUMENTATION" CHANGE THE "CONDITION AND SETPOINT" DESCRITION FOR THE P-7 PERMISSIVE TO REFLECT RELOCATION OF TURBINE PRESSURE TRANSMITTERS

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REQUEST FOR CHANGE TO TECHNICAL SPECIFICATIONS TABLE 3.3-1, "REACTOR TRIP SYSTEM INSTRUMENTATION" CHANGE THE "CONDITION AND SETPOINT" DESCRIPTION FOR THE P-7 PERMISSIVE TO REFLECT RELOCATION OF TURBINE PRESSURE TRANSMITTERS

1.0 DESCRIPTION

The proposed change revises the "Condition and Setpoint" section for permissive interlock P-7. As described below, the words "Turbine impulse chamber pressure" will be changed to "Turbine steam line inlet pressure". This license change request (LCR) does not alter the current design or function of the P-7 permissive.

The current turbine configuration has two pressure taps on the first stage of the turbine downstream of the control stage (one at the turbine end and one at the generator end) to measure the impulse pressure. As part of the turbine upgrade/electrical power uprate program, the rotor and stationary blades of the High Pressure Turbine (HPT) are being replaced. To support this effort, the pressure taps are being relocated immediately upstream of the turbine on the turbine steam inlets.

For Unit 2, the modification will be completed during 2R13. NRC approval is requested by October 6, 2003, 30 days prior to the end of the outage (November 6, 2003). For Unit 1, the modification will be completed during 1R16. NRC approval is requested by October 6, 2003, but the license change will not be implemented until the end of the outage (May 12, 2004).

2.0 PROPOSED CHANGE

The "Condition and Setpoint" description for permissive P-7 provided in Table 3.3-1 currently states:

With 2 of 4 Power Range Neutron Flux Channels ≥ 11% of RATED THERMAL POWER or 1 of 2 Turbine impulse chamber pressure channels ≥ a pressure equivalent to 11% of RATED THERMAL POWER.

The proposed change replaces "Turbine impulse chamber pressure" with "Turbine steam line inlet pressure".

3.0 BACKGROUND

In support of the turbine upgrade/electrical power uprate program for Units 1 and 2, the rotor and stationary blades on the High Pressure Turbine (HPT) will be replaced. The HPT is currently equipped with a combination of impulse and reaction blading with impulse blading in the first row. The impulse pressure is sensed downstream of this row and fed into plant instrumentation and control systems. The new design eliminates the impulse row. All nine rows of the new HPT will be equipped with reaction blades. This modification, therefore, converts the HPT from an impulse to a Reaction Turbine.

Since the pressure downstream of the reaction blades is non-linear, the turbine redesign moves the pressure sensing taps for pressure transmitters PT505/506 to just upstream of the inlet steam emission ring, but downstream of the turbine governor valve.

The current PT505/506 locations are shown in Figure 1. The new locations for the transmitters are shown in Figure 2.

This proposed change is similar to an amendment issued by the NRC for Beaver Valley (Reference e).

4.0 TECHNICAL ANALYSIS

The physical changes to the Unit 1 and Unit 2 turbines and the associated relocation of the pressure taps will be performed under the PSEG design change process, following approval of this License Change Request.

In replacing the rotor and stationary blades on the High Pressure Turbine (HPT), the turbine power will be increased by 12 MWe (nominal). This electrical power increase is entirely due to the increased efficiency of the HP turbine design. The electrical power increase does not affect plant operation or the Chapter 15 safety analysis.

The impulse pressure being a direct, linear measure of turbine power is fed to various indication, recording, monitoring, control, and protection end users including:

1. Control Room Indication and Recording
2. As an input to generate T_{ref} signals for the Reactor Control and Steam Dump Control Systems
3. As an input to the Steam Generator (SG) reference levels for the SG Water Level Control System
4. As input to the Rod Control System to develop the P-2 interlock
5. As input into the Steam Dump Control System interlock C-7
6. As an input to generate permissive P-13 that, in turn, helps generate the permissive P-7
7. As an input into AMSAC
8. As an input to the plant computer
9. As an input into the steam flow comparators.

The function and design basis for the I&C logic circuitry are unaffected by this modification. Component and system responses are unaffected by the physical changes.

Since the indicated pressure at the new location on the main steam line is greater than the pressure sensed at the existing location, and the turbine pressure versus percent Rated Thermal Power (RTP) curve will change, all end users of the pressure signal will be affected. The major changes are summarized as follows:

1. The setpoint/uncertainty calculation for the Turbine Steam Line Inlet Pressure will be revised;
2. Sensor and channel calibration procedures will be revised;
3. Pressure indicators PI505/PI506 and associated loops will be recalibrated to the new values specified in the setpoint/uncertainty calculation;
4. Various other indicators and alarms will be recalibrated as required; and
5. The revised vendor turbine pressure versus RTP curve will be verified or the as found curve will be documented.

All physical work will be performed in a Mode where the TS function is not required. No Technical Specification (TS) action statements are associated with the affected plant components in these modes.

In the current configuration, the P-7 permissive is made up whenever two of four Power Range Neutron Flux channels detect that power is above 11% RTP or one of two turbine impulse chamber pressure channels detect that the steam pressure above a pressure equivalent to 11% RTP. After installation and testing of the modification, the permissive will operate in the same manner when one of two Turbine Steam Line Inlet pressure channels detect that the steam pressure is above a pressure equivalent to 11% RTP.

In conclusion, the function and design basis for the I&C logic is unaffected by this modification. The end users of the pressure signal will be affected, but these users will be re-calibrated to respond to the revised turbine pressure versus RTP curve to maintain their safety function.

The proposed license change renames the HPT turbine pressure to reflect the new sensing location.

5.0 REGULATORY SAFETY ANALYSIS

5.1 No Significant Hazards Consideration

PSEG Nuclear LLC (PSEG) has evaluated whether or not a significant hazards consideration in involved with the proposed change by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment" as discussed below:

1. Does the proposed change involve a significant increase in probability or consequences of an accident previously evaluated?

   The proposed change to replace the words "impulse chamber" with "steam line input" in the descriptive text associated with the P-7 function of the Reactor Trip System (RTS) does not involve any physical or design change to the P-7 function. The proposed change renames the turbine inlet pressure to reflect the change in turbine design and the new location where the pressure is sensed. It is intended to eliminate any potential confusion concerning the turbine type or sensing location.

   Because the P-7 function is not affected by the proposed change, it does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The relationship between first stage turbine pressure and the RTP at the new location will be verified/determined during testing. Although the pressure sensed at the new location is higher than the pressure sensed at the current location, the end users with Reactor Protection System (RPS) and associated functions will be recalibrated/re-scaled as necessary to maintain their design basis functions. The response of the I&C logic is unaffected by this modification. The Safety Analysis design function of the loops has not changed.

   Therefore, the proposed change does not create the possibility of a new or different kind of accident than any previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

   The requirement for the turbine pressure input to the P-7 RTS interlock is that the P-7 signal be representative of the rated thermal power. This is accomplished by measuring the pressure at the HPT because this pressure exhibits a consistent and accurate relationship with the rated thermal power.

   The end users with Reactor Protection System (RPS) and associated functions will be recalibrated/re-scaled as necessary to maintain their design basis functions. The response of the I&C logic is unaffected by this modification. The Safety Analysis design function of the loops has not changed.

   Therefore, the proposed change does not involve a significant reduction in the margin of safety.

This proposed change does not involve any physical or design change for the P-7 function, and will have no effect on the operation of the RPS. Therefore, based on the above, PSEG concludes that the proposed changes present no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of "no significant hazards consideration" is justified.

5.2 Applicable Regulatory Requirements/Criteria

This change does not affect regulatory requirements and/or criteria.

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the license change will not be inimical to the common defense and security or to the health and safety of the public.

6. ENVIRONMENTAL CONSIDERATION

ENVIRONMENTAL ASSESSMENT/IMPACT STATEMENT

Pursuant to 10 CFR 51.22(b), an evaluation of this license change request has been performed to determine whether or not it meets the criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) of the regulations.

Implementation of this change will have no adverse impact upon the Salem units; neither will it contribute to any significant additional quantity or type of effluent being available for adverse environmental or personnel exposure. The change does not introduce any new effluents or significantly increase the quantities of existing effluents. As such, the change cannot significantly affect the types or amounts of any effluents that may be released offsite. The consequences of replacing (1) the HP turbine rotor and blades and (2) relocating the PT505/506 pressure transmitters does not affect environmental releases.

It has been determined there is:

1. No significant hazards consideration,

2. No significant change in the types, or significant increase in the amounts, of any effluents that may be released offsite, and

3. No significant increase in individual or cumulative occupational radiation exposures involved.

Therefore, this change to the Salem TS meets the criteria of 10 CFR 51.22(c)(9) for categorical exclusion from an environmental impact statement.

7. RISK SIGNIFICANCE

The changes discussed above do not affect the function and response of plant safety systems or the Salem Chapter 15 safety analyses.

The increased HP turbine pressure readings will be rescaled (the inlet turbine pressure-RTP curve) to the reactor thermal power so that the P-7 permissive will respond in the appropriate manner when the PT505/506 pressure transmitters sense a pressure equivalent to 11% RTP. All other end users will be recalibrated to respond accordingly to their design basis safety and non-safety requirements.

In summary, based on considerations discussed above:

a. There is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner,
b. Such activities will be conducted in compliance with the Commissions regulations, and
c. The issuance of the license change will not be inimical to the common defense and security or the health and safety of the public.

8. REFERENCES

a. DCP 80048558, "Replacement of High Pressure Turbine Rotor and Stationary Blades for Salem 2".
b. DCP 80049215, "Salem Unit 2 PT505/506 Pressure Tap Relocation".
c. DCP 80048555, "Replacement of High Pressure Turbine Rotor and Stationary Blades for Salem 1".
d. DCP 80050284, "Salem Unit 1 PT505/506 Pressure Tap Relocation".
e. NRC Issued Amendment and SER for Beaver Valley (TAC Nos. MB5850 and MB5851) dated February 24, 2003 that included renaming "impulse chamber" pressure.

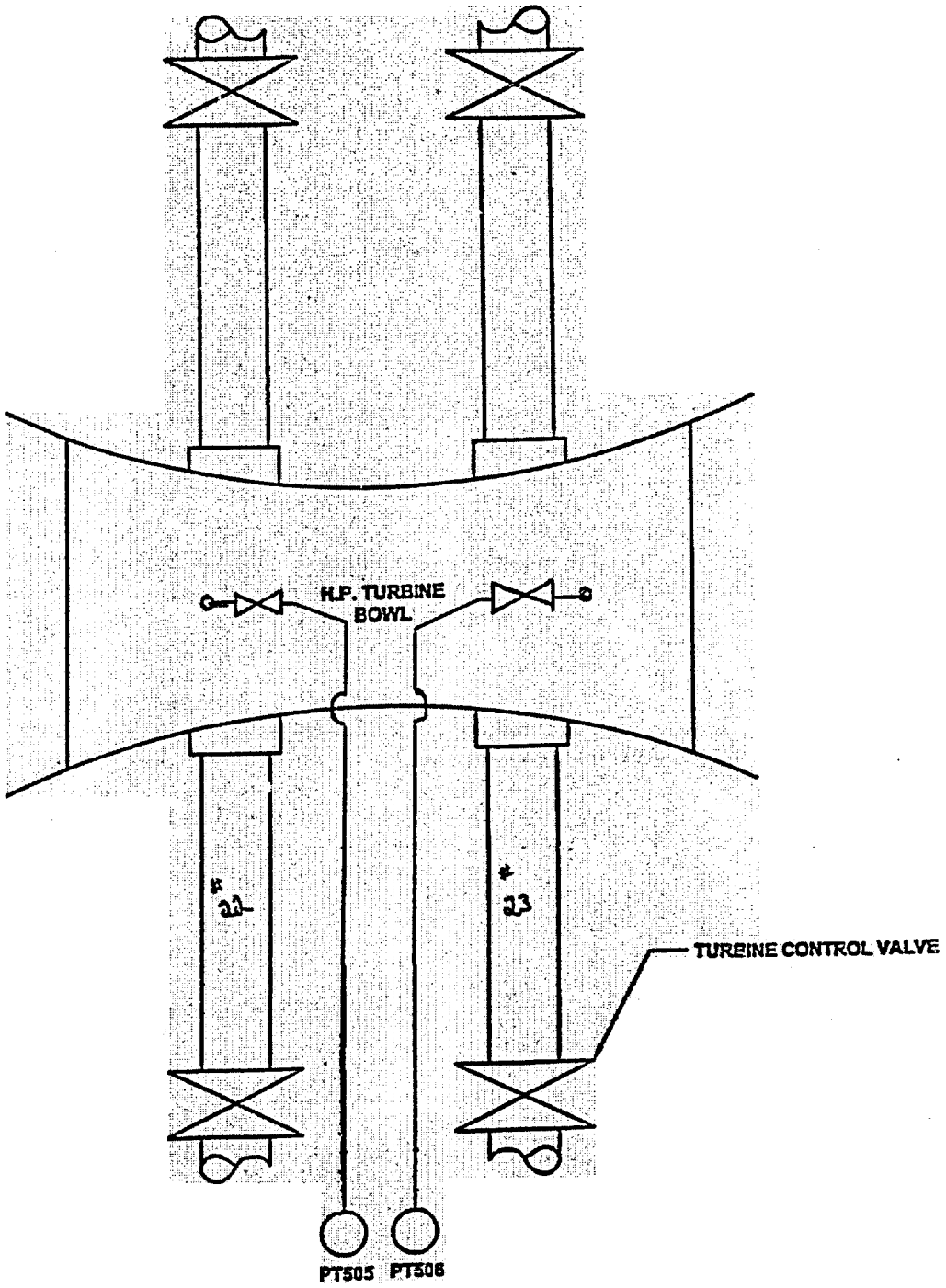

Figure 1
Current Location of Transmitters PT505/506

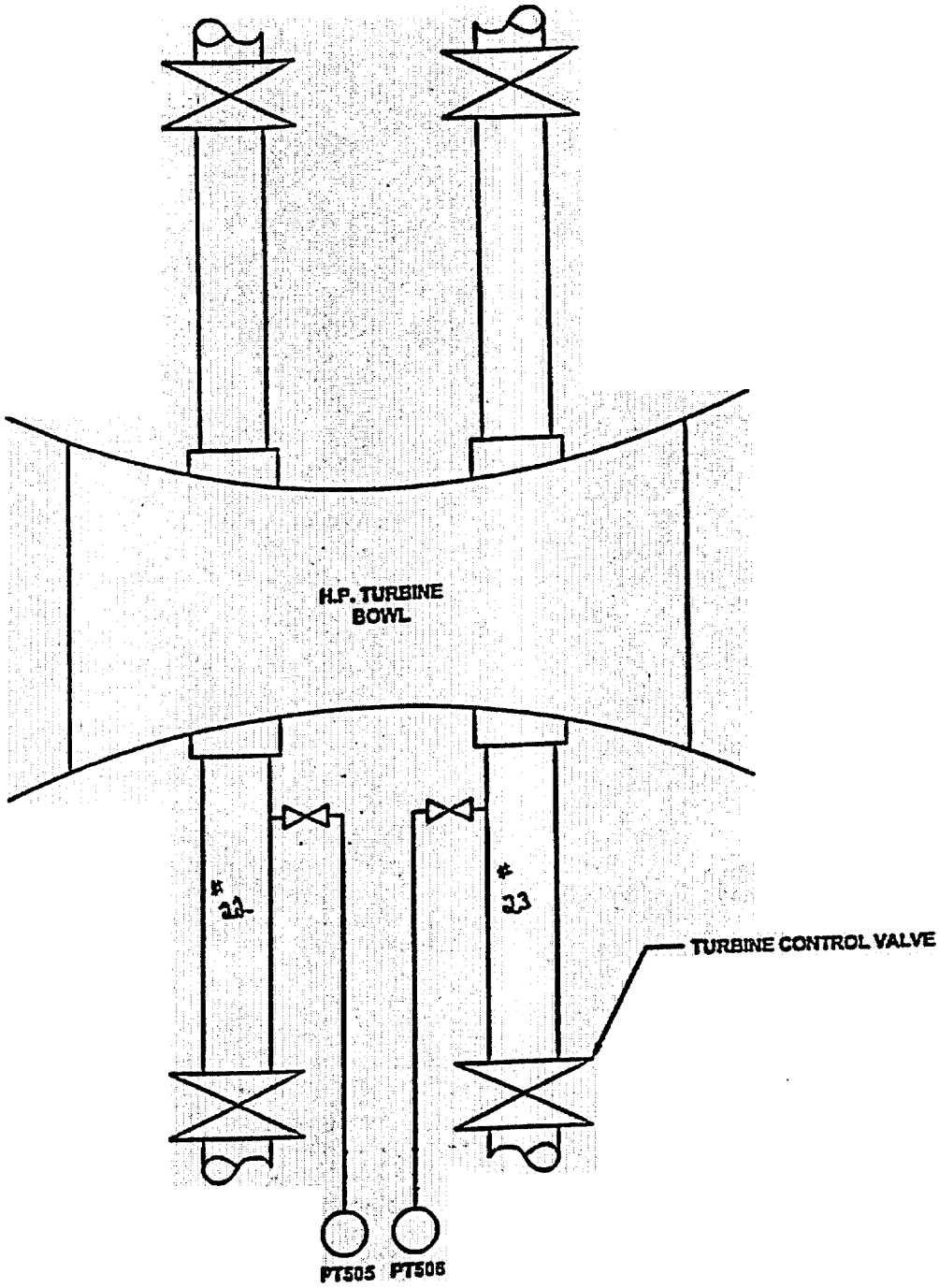

Figure 2
Relocated Pressure Transmitters PT505/506

SALEM NUCLEAR GENERATING STATION, UNITS 1 AND 2
FACILITY OPERATING LICENSES DPR-70 AND DPR-75
DOCKET NOS. 50-272 AND 50-311
REVISION TO TECHNICAL SPECIFICATION TABLE 3.3-1
CHANGE THE "CONDITION AND SETPOINT"
DESCRIPTION FOR PERMISSIVE P-7

TECHNICAL SPECIFICATION PAGES WITH PROPOSED CHANGES

The following Technical Specifications for Facility Operating License No. DPR-70 are affected by this change request:

Technical Specification	Page
3/4.3.1.1, Table 3.3-1	3/4 3-7

The following Technical Specifications for Facility Operating License No. DPR-75 are affected by this change request:

Technical Specification	Page
3/4.3.1.1, Table 3.3-1	3/4 3-7

TABLE 3.3-1 (Continued)

ACTION 10 - With the number of OPERABLE Channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 6 hours or be in at least HOT STANDBY in the next 6 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.1.1.1, provided the other channel is OPERABLE.

ACTION 11 - With less than the Minimum Number of Channels OPERABLE, operation may continue provided the inoperable channel is placed in the tripped condition within 6 hours.

ACTION 12 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or be in HOT STANDBY within the next 6 hours and/or open the reactor trip breakers.

ACTION 13 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or open the reactor trip breakers within the next hour.

ACTION 14 - With one of the diverse trip features (Undervoltage or shunt trip attachment) inoperable, restore it to OPERABLE status within 48 hours or declare the breaker inoperable and be in at least HOT STANDBY within 6 hours. The breaker shall not be bypassed while one of the diverse trip features is inoperable except for the time required for performing maintenance to restore the breaker to OPERABLE status.

REACTOR TRIP SYSTEM INTERLOCKS

DESIGNATION	CONDITION AND SETPOINT	FUNCTION
P-6	With 2 of 2 Intermediate Range Neutron Flux Channels < $6x10^{-11}$ amps.	P-6 prevents or defeats the manual block of source range reactor trip.
P-7	With 2 of 4 Power Range Neutron Flux Channels ≥ 11% of RATED THERMAL POWER or 1 of 2 Turbine steam line inlet ~~impulse chamber~~ pressure channels ≥ a pressure equivalent to 11% of RATED THERMAL POWER.	P-7 prevents or defeats the automatic block of reactor trip on: Low flow in more than one primary coolant loop, reactor coolant pump undervoltage and under-frequency, pressurizer low pressure, pressurizer high level, and the opening of more than one reactor coolant pump breaker.

TABLE 3.3-1 (Continued)

ACTION 10 - With the number of OPERABLE Channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 6 hours or be in at least HOT STANDBY in the next 6 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.1.1.1 provided the other channel is OPERABLE.

ACTION 11 - With less than the Minimum Number of Channels OPERABLE, operation may continue provided the inoperable channel is placed in the tripped condition within 6 hours.

ACTION 12 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or be in HOT STANDBY within the next 6 hours and/or open the reactor trip breakers.

ACTION 13 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or open the reactor trip breakers within the next hour.

ACTION 14 - With one of the diverse trip features (Undervoltage or shunt trip attachment) inoperable, restore it to OPERABLE status within 48 hours or declare the breaker inoperable and be in at least HOT STANDBY within 6 hours. The breaker shall not be bypassed while one of the diverse trip features is inoperable except for the time required for performing maintenance to restore the breaker to OPERABLE status.

REACTOR TRIP SYSTEM INTERLOCKS

DESIGNATION	CONDITION AND SETPOINT	FUNCTION
P-6	With 2 of 2 Intermediate Range Neutron Flux Channels < $6x10^{-11}$ amps.	P-6 prevents or defeats the manual block of source range reactor trip.
P-7	With 2 of 4 Power Range Neutron Flux Channels ≥ 11% of RATED THERMAL POWER or 1 of 2 Turbine steam line inlet pressure ~~impulse chamber pressure~~ channels ≥ a pressure equivalent to 11% of RATED THERMAL POWER.	P-7 prevents or defeats the automatic block of reactor trip on: Low flow in more than one primary coolant loop, reactor coolant pump undervoltage and under-frequency, pressurizer low pressure, pressurizer high level, and the opening of more than one reactor coolant pump breaker.