REACTOR COOLANT SYSTEM

3/4.4.4 RELIEF VALVES

LIMITING CONDITION FOR OPERATION

3.4.4 ~~All~~ Both power-operated relief valves (PORVs) and their associated block valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

a. With one or ~~more~~ both PORV(s) inoperable, because of excessive seat leakage, within 1 hour either restore the PORV(s) to OPERABLE status or close the associated block valve(s); otherwise, be in at least HOT STANDBY within the next 6 hours and in ~~COLD~~ HOT SHUTDOWN within the following ~~30~~ 6 hours.

b. With one PORV inoperable due to causes other than excessive seat leakage, within 1 hour either restore the PORV to OPERABLE status or close the associated block valve and remove power from the block valve; restore the PORV to OPERABLE status within the following 72 hours or be in HOT STANDBY within the next 6 hours and in ~~COLD~~ HOT SHUTDOWN within the following ~~30~~ 6 hours.

c. With both PORV~~s~~ inoperable due to causes other than excessive seat leakage, within 1 hour either restore ~~each of the~~ at least one PORV~~s~~ to OPERABLE status or close ~~their~~ associated block valve~~s~~ and remove power from the block valve~~s~~ and be in HOT STANDBY within the next 6 hours and ~~COLD~~ HOT SHUTDOWN within the following ~~30~~ 6 hours.

d. With one or more block valve(s) inoperable, within 1 hour: (1) restore the block valve(s) to OPERABLE status, or close the block valve(s) and remove power from the block valve(s), or close the PORV and remove power from its associated solenoid valve; and (2) apply the ACTION b. or c. above, as appropriate, for the isolated PORV(s).

e. The provisions of Specification 3.0.4 are not applicable.

With one or both block valves inoperable, within 1 hour restore the block valve(s) to OPERABLE status or place its associated PORV(s) in ~~manual control~~ control switch to "CLOSE". Restore at least one block valve to OPERABLE status within the next hour if both block valves are inoperable; restore any remaining inoperable block valve to operable status within 72 hours; otherwise, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

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SURVEILLANCE REQUIREMENTS

4.4.4.1 In addition to the requirements of Specification 4.0.5, each PORV shall be demonstrated OPERABLE at least once per 18 months by:

a. Performance of a CHANNEL CALIBRATION, and

b. Operating the valve through one complete cycle of full travel during MODES 3 or 4.

4.4.4.2 Each block valve shall be demonstrated OPERABLE at least once per 92 days by operating the valve through one complete cycle of full travel unless the block valve is closed with power removed in order to meet the requirements of ACTION b. or c. in Specification 3.4.4.

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One RHR suction relief valve and one PORV with setpoints as required above

LIMITING CONDITION FOR OPERATION

3.4.9.3 The following Overpressure Protection Systems shall be OPERABLE:

a. In MODE 4 when the temperature of any RCS cold leg is less than or equal to 329°F; and in MODE 5 and MODE 6 with all Safety Injection pumps inoperable, at least one of the following groups of two overpressure protection devices shall be OPERABLE when the RCS is not depressurized with an RCS vent area of greater than or equal to 1.58 square inches:

1) Two residual heat removal (RHR) suction relief valves each with a setpoint of 450 psig +0, -3 %; or

2) Two power-operated relief valves (PORVs) with lift setpoints that vary with RCS temperature which do not exceed the limit established in Figure 3.4-4, or

3) ~~The Reactor Coolant System (RCS) depressurized with an RCS vent area of greater than or equal to 1.58 square inches.~~

b. In MODE 5 and MODE 6 with all Safety Injection pumps except one inoperable:

1) The Reactor Coolant System (RCS) depressurized with an RCS vent area equal to or greater than 18 square inches.

APPLICABILITY: MODE 4 when the temperature of any RCS cold leg is less than or equal to 329°F; MODE 5 and MODE 6 with the reactor vessel head on.

ACTION:

~~a. In MODE 4, MODE 5 and MODE 6 with all Safety Injection pumps inoperable:~~

In MODE 4 with all Safety Injection pumps inoperable and

a 1) With one ~~PORV and one RHR suction relief valve~~ inoperable, either restore two ~~PORVs or two RHR suction relief valves~~ to OPERABLE status within 7 days or depressurize and vent the RCS through at least a 1.58-square-inch vent within the next 8 hours.

In MODE 4, MODE 5 and MODE 6 with all Safety Injection pumps inoperable and

c 2) With both ~~PORVs and both RHR suction relief valves~~ inoperable, depressurize and vent the RCS through at least a 1.58-square-inch vent within 8 hours.

2 3) In the event the PORVs, or the RHR suction relief valves, or the RCS vent(s) are used to mitigate an RCS pressure transient, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.8.2 within 30 days. The report shall describe the circumstances initiating the transient, the effect of the PORVs, or the RHR suction relief valves, or RCS vent(s) on the transient, and any corrective action necessary to prevent recurrence.

overpressure protection devices

of the two required overpressure protection devices

of the 1 two required overpressure protection devices

INSERT A

LIMITING CONDITION FOR OPERATION

ACTION: (Continued)

~~c~~ b. In MODE 5 and MODE 6 with all Safety Injection pumps except one inoperable,

~~1)~~ With the RCS vent area less than 18 square inches, immediately restore all Safety Injection pumps to inoperable status.

INSERT A

b. In MODE 5 and 6 with all Safety Injection pumps inoperable and with one of the two required overpressure protection devices inoperable, restore two overpressure protection devices to OPERABLE status within 24 hours or within the next 8 hours (a) depressurize the RCS and (b) vent the RCS through at least a 1.58 square inch vent.

when the PORV(s) are being used for overpressure protection

SURVEILLANCE REQUIREMENTS

4.4.9.3.1 Each PORV shall be demonstrated OPERABLE by:

a. Performance of an ANALOG CHANNEL OPERATIONAL TEST on the PORV actuation channel, but excluding valve operation, ~~within 31 days prior to entering a condition in which the PORV is required OPERABLE and~~ at least once per 31 days thereafter when the PORV is required OPERABLE; and

b. Performance of a CHANNEL CALIBRATION on the PORV actuation channel at least once per 18 months; and

c. Verifying the PORV isolation valve is open at least once per 72 hours, ~~when the PORV is being used for overpressure protection~~.

4.4.9.3.2 Each RHR suction relief valve shall be demonstrated OPERABLE when the RHR suction relief valve(s) are being used for ~~cold~~ overpressure protection as follows:

a. For RHR suction relief valve RC-V89 by verifying at least once per 72 hours that RHR suction isolation valves RC-V87 and RC-V88 are open.

b. For RHR suction relief valve RC-V24 by verifying at least once per 72 hours that RHR suction isolation valves RC-V22 and RC-V23 are open.

c. Testing pursuant to Specification 4.0.5.

4.4.9.3.3 The RCS vent(s) shall be verified to be open at least once per 12 hours* when the vent(s) is being used for overpressure protection.

*Except when the vent pathway is provided with a valve(s) or devices(s) that is locked, sealed, or otherwise secured in the open position, then verify this valve(s) or device(s) open at least once per 31 days.

3/4.4.2 SAFETY VALVES (Continued)

During operation, all pressurizer Code safety valves must be OPERABLE to prevent the RCS from being pressurized above its Safety Limit of 2735 psig. The combined relief capacity of all of these valves is greater than the maximum surge rate resulting from a complete loss of load assuming no Reactor trip until the first Reactor Trip System Trip Setpoint is reached (i.e., no credit is taken for a direct Reactor trip on the loss of load) and also assuming no operation of the power-operated relief valves or steam dump valves.

Demonstration of the safety valves' lift settings will occur only during shutdown and will be performed in accordance with the provisions of Section XI of the ASME Boiler and Pressure Code.

3/4.4.3 PRESSURIZER

The limit on the maximum water volume in the pressurizer assures that the parameter is maintained within the normal steady-state envelope of operation assumed in the SAR. The limit is consistent with the initial SAR assumptions. The 12-hour periodic surveillance is sufficient to ensure that the parameter is restored to within its limit following expected transient operation. The maximum water volume also ensures that a steam bubble is formed and thus the RCS is not a hydraulically solid system. The requirement that a minimum number of pressurizer heaters be OPERABLE enhances the capability of the plant to control Reactor Coolant System pressure and establish natural circulation.

3/4.4.4 RELIEF VALVES

The power-operated relief valves (PORVs) and steam bubble function to relieve RCS pressure during all design transients up to and including the design step load decrease with steam dump. Operation of the PORVs minimizes the undesirable opening of the spring-loaded pressurizer Code safety valves. Each PORV has a remotely operated block valve to provide a positive shutoff capability should a relief valve become inoperable. The PORVs and their associated block valves are powered from Class 1E power supply busses.

Insert B

3/4.4.5 STEAM GENERATORS

The Surveillance Requirements for inspection of the steam generator tubes ensure that the structural integrity of this portion of the RCS will be maintained. The program for inservice inspection of steam generator tubes is based on a modification of Regulatory Guide 1.83, Revision 1. Inservice inspection of steam generator tubing is essential in order to maintain surveillance of the conditions of the tubes in the event that there is evidence of mechanical damage or progressive degradation due to design, manufacturing errors, or inservice conditions that lead to corrosion. Inservice inspection of steam generator tubing also provides a means of characterizing the nature and cause of any tube degradation, so that corrective measures can be taken.

INSERT B

The PORVs are equipped with automatic actuation circuitry and manual control capability. The PORVs are considered OPERABLE in either the automatic or manual mode for the following reasons:

(1) No credit is taken in any FSAR accident analysis for automatic PORV actuation to mitigate the consequences of an accident.

(2) No Surveillance Requirement (ACOT or TADOT) exist for verifying automatic operation.

(3) The required ACTION for an inoperable PORV(s) (closing the block valve) conflicts with any presumed requirement for automatic actuation.

or a combination of a PORV and RHR suction relief valve

3/4.4.9 PRESSURE/TEMPERATURE LIMITS (Continued)

COLD OVERPRESSURE PROTECTION

The OPERABILITY of two PORVs, or two RHR suction relief valves, or an RCS vent opening of at least 1.58 square inches ensures that the RCS will be protected from pressure transients which could exceed the limits of Appendix G to 10 CFR Part 50 when one or more of the RCS cold legs are less than or equal to 329°F. Either PORV or either RHR suction relief valve has adequate relieving capability to protect the RCS from overpressurization when the transient is limited to either: (1) the start of an idle RCP with the secondary water temperature of the steam generator less than or equal to 50°F above the RCS cold leg temperatures, or (2) the start of a centrifugal charging pump and its injection into a water-solid RCS.

The Maximum Allowed PORV Setpoint for the Cold Overpressure Mitigation System (COMS) is derived by analysis which models the performance of the COMS assuming various mass input and heat input transients. Operation with a PORV Setpoint less than or equal to the maximum Setpoint ensures that Appendix G criteria will not be violated with consideration for: (1) a maximum pressure overshoot beyond the PORV Setpoint which can occur as a result of time delays in signal processing and valve opening; (2) a 50°F heat transport effect made possible by the geometrical relationship of the RHR suction line and the RCS wide range temperature indicator used for COMS; (3) instrument uncertainties; and (4) single failure. To ensure mass and heat input transients more severe than those assumed cannot occur, Technical Specifications require lockout of both Safety Injection pumps and all but one centrifugal charging pump while in MODES 4, 5, and 6 with the reactor vessel head installed and disallow start of an RCP if secondary coolant temperature is more than 50°F above reactor coolant temperature. Exceptions to these requirements are acceptable as described below.

Operation above 350°F but less than 375°F with only centrifugal charging pump OPERABLE and no Safety Injection pumps OPERABLE is allowed for up to 4 hours. As shown by analysis, LOCAs occurring at low temperature, low pressure conditions can be successfully mitigated by the operation of a single centrifugal charging pump and a single RHR pump with no credit for accumulator injection. Given the short time duration and the condition of having only one centrifugal charging pump OPERABLE and the probability of a LOCA occurring during this time, the failure of the single centrifugal charging pump is not assumed.

Operation below 350°F but greater than 325°F with all centrifugal charging and Safety Injection pumps OPERABLE is allowed for up to 4 hours. During low pressure, low temperature operation all automatic Safety Injection actuation signals except Containment Pressure - High are blocked. In normal conditions, a single failure of the ESF actuation circuitry will result in the starting of at most one train of Safety Injection (one centrifugal charging pump, and one Safety Injection pump). For temperatures above 325°F, an overpressure event occurring as a result of starting two pumps can be successfully mitigated by

III. Retype of Proposed Changes

See attached retype of proposed changes to Technical Specifications. The attached retype reflects the currently issued version of Technical Specifications. Pending Technical Specification changes or Technical Specification changes issued subsequent to this submittal are not reflected in the enclosed retype. The enclosed retype should be checked for continuity with Technical Specifications prior to issuance.

Revision bars are provided in the right hand margin to designate a change in the text. No revision bars are utilized when the page is changed solely to accommodate the shifting of text due to additions or deletions.

3/4.4.4 RELIEF VALVES

LIMITING CONDITION FOR OPERATION

3.4.4 Both power-operated relief valves (PORVs) and their associated block valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

a. With one or both PORV(s) inoperable, because of excessive seat leakage, within 1 hour either restore the PORV(s) to OPERABLE status or close the associated block valve(s) with power maintained to the block valve(s); otherwise, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

b. With one PORV inoperable due to causes other than excessive seat leakage, within 1 hour either restore the PORV to OPERABLE status or close the associated block valve and remove power from the block valve; restore the PORV to OPERABLE status within the following 72 hours or be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

c. With both PORVs inoperable due to causes other than excessive seat leakage, within 1 hour either restore at least one PORV to OPERABLE status or close each associated block valve and remove power from the block valve and be in HOT STANDBY within the next 6 hours and HOT SHUTDOWN within the following 6 hours.

d. With one or both block valves inoperable, within 1 hour restore the block valve(s) to OPERABLE status or place its associated PORV(s) control switch to "CLOSE". Restore at least one block valve to OPERABLE status within the next hour if both block valves are inoperable; restore any remaining inoperable block valve to operable status within 72 hours; otherwise, be at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

e. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.4.4.1 In addition to the requirements of Specification 4.0.5, each PORV shall be demonstrated OPERABLE at least once per 18 months by:

a. Performance of a CHANNEL CALIBRATION, and

b. Operating the valve through one complete cycle of full travel during MODES 3 or 4.

4.4.4.2 Each block valve shall be demonstrated OPERABLE at least once per 92 days by operating the valve through one complete cycle of full travel unless the block valve is closed with power removed in order to meet the requirements of ACTION b. or c. in Specification 3.4.4.

REACTOR COOLANT SYSTEM

PRESSURE/TEMPERATURE LIMITS

OVERPRESSURE PROTECTION SYSTEMS

LIMITING CONDITION FOR OPERATION

3.4.9.3 The following Overpressure Protection Systems shall be OPERABLE:

a. In MODE 4 when the temperature of any RCS cold leg is less than or equal to 329°F; and in MODE 5 and MODE 6 with all Safety Injection pumps inoperable at least one of the following groups of two overpressure protection devices shall be OPERABLE when the RCS is not depressurized with an RCS vent area of greater than or equal to 1.58 square inches:

1) Two residual heat removal (RHR) suction relief valves each with a setpoint of 450 psig +0, -3 %; or

2) Two power-operated relief valves (PORVS) with lift setpoints that vary with RCS temperature which do not exceed the limit established in Figure 3.4-4, or

3) One RHR suction relief valve and one PORV with setpoints as required above.

b. In MODE 5 and MODE 6 with all Safety Injection pumps except one inoperable:

1) The Reactor Coolant System (RCS) depressurized with an RCS vent area equal to or greater than 18 square inches.

APPLICABILITY: MODE 4 when the temperature of any RCS cold leg is less than or equal to 329°F; MODE 5 and MODE 6 with the reactor vessel head on.

ACTION:

a) In MODE 4 with all Safety Injection pumps inoperable and with one of the two required overpressure protection devices inoperable, either restore two overpressure protection devices to OPERABLE status within 7 days or within the next 8 hours

(a) depressurize the RCS and

(b) vent the RCS through at least a 1.58-square-inch vent.

b) In MODE 5 and MODE 6 with all Safety Injection pumps inoperable and with one of the two required overpressure protection devices inoperable, restore two overpressure protection devices to OPERABLE status within 24 hours or within the next 8 hours

(a) depressurize the RCS and

(b) vent the RCS through at least a 1.58 square-inch vent.

ACTION: (Continued)

c) In MODE 4, MODE 5 and MODE 6 with all Safety Injection pumps inoperable and with both of the two required overpressure protection devices inoperable, within the next 8 hours

(a) depressurize the RCS and

(b) vent the RCS through at least a 1.58-square-inch vent.

d) In the event the PORVS, or the RHR suction relief valves, or the RCS vent(s) are used to mitigate an RCS pressure transient, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.8.2 within 30 days. The report shall describe the circumstances initiating the transient, the effect of the PORVS, or the RHR suction relief valves, or RCS vent(s) on the transient, and any corrective action necessary to prevent recurrence.

e) In MODE 5 and MODE 6 with all Safety Injection pumps except one inoperable and with the RCS vent area less than 18 square inches, immediately restore all Safety Injection pumps to inoperable status.

SURVEILLANCE REQUIREMENTS

4.4.9.3.1 Each PORV shall be demonstrated OPERABLE when the PORV(s) are being used for overpressure protection by:

a. Performance of an ANALOG CHANNEL OPERATIONAL TEST on the PORV actuation channel, but excluding valve operation, at least once per 31 days when the PORV is required OPERABLE; and

b. Performance of a CHANNEL CALIBRATION on the PORV actuation channel at least once per 18 months; and

c. Verifying the PORV isolation valve is open at least once per 72 hours.

4.4.9.3.2 Each RHR suction relief valve shall be demonstrated OPERABLE when the RHR suction relief valve(s) are being used for overpressure protection as follows:

a. For RHR suction relief valve RC-V89 by verifying at least once per 72 hours that RHR suction isolation valves RC-V87 and RC-V88 are open.

b. For RHR suction relief valve RC-V24 by verifying at least once per 72 hours that RHR suction isolation valves RC-V22 and RC-V23 are open.

c. Testing pursuant to Specification 4.0.5.

4.4.9.3.3 The RCS vent(s) shall be verified to be open at least once per 12 hours* when the vent(s) is being used for overpressure protection.

*Except when the vent pathway is provided with a valve(s) or devices(s) that is locked, sealed, or otherwise secured in the open position, then verify this valve(s) or device(s) open at least once per 31 days.

3/4.4.2 SAFETY VALVES (Continued)

During operation, all pressurizer Code safety valves must be OPERABLE to prevent the RCS from being pressurized above its Safety Limit of 2735 psig. The combined relief capacity of all of these valves is greater than the maximum surge rate resulting from a complete loss of load assuming no Reactor trip until the first Reactor Trip System Trip Setpoint is reached (i.e., no credit is taken for a direct Reactor trip on the loss of load) and also assuming no operation of the power-operated relief valves or steam dump valves.

Demonstration of the safety valves' lift settings will occur only during shutdown and will be performed in accordance with the provisions of Section XI of the ASME Boiler and Pressure Code.

3/4.4.3 PRESSURIZER

The limit on the maximum water volume in the pressurizer assures that the parameter is maintained within the normal steady-state envelope of operation assumed in the SAR. The limit is consistent with the initial SAR assumptions. The 12-hour periodic surveillance is sufficient to ensure that the parameter is restored to within its limit following expected transient operation. The maximum water volume also ensures that a steam bubble is formed and thus the RCS is not a hydraulically solid system. The requirement that a minimum number of pressurizer heaters be OPERABLE enhances the capability of the plant to control Reactor Coolant System pressure and establish natural circulation.

3/4.4.4 RELIEF VALVES

The power-operated relief valves (PORVS) and steam bubble function to relieve RCS pressure during all design transients up to and including the design step load decrease with steam dump. Operation of the PORVs minimizes the undesirable opening of the spring-loaded pressurizer Code safety valves. Each PORV has a remotely operated block valve to provide a positive shutoff capability should a relief valve become inoperable. The PORVs and their associated block valves are powered from Class 1E power supply busses.

The PORVs are equipped with automatic actuation circuitry and manual control capability. The PORVs are considered OPERABLE in either the automatic or manual mode for the following reasons:

(1) No credit is taken in any FSAR accident analysis for automatic PORV actuation to mitigate the consequences of an accident.

(2) No Surveillance Requirement (ACOT or TADOT) exist for verifying automatic operation.

(3) The required ACTION for an inoperable PORV(s) (closing the block valve) conflicts with any presumed requirement for automatic actuation.

3/4.4.5 STEAM GENERATORS

The Surveillance Requirements for inspection of the steam generator tubes ensure that the structural integrity of this portion of the RCS will be maintained. The program for inservice inspection of steam generator tubes is based on a modification of Regulatory Guide 1.83, Revision 1. Inservice inspection of steam generator tubing is essential in order to maintain surveillance of the conditions of the tubes in the event that there is evidence of mechanical damage or progressive degradation due to design, manufacturing errors, or inservice conditions that lead to corrosion. Inservice inspection of steam generator tubing also provides a means of characterizing the nature and cause of any tube degradation, so that corrective measures can be taken.

3/4.4.9 PRESSURE/TEMPERATURE LIMITS (Continued)

COLD OVERPRESSURE PROTECTION

The OPERABILITY of two PORVs, or two RHR suction relief valves, or a combination of a PORV and RHR suction relief valve, or an RCS vent opening of at least 1.58 square inches ensures that the RCS will be protected from pressure transients which could exceed the limits of Appendix G to 10 CFR Part 50 when one or more of the RCS cold legs are less than or equal to 329°F. Either PORV or either RHR suction relief valve has adequate relieving capability to protect the RCS from overpressurization when the transient is limited to either: (1) the start of an idle RCP with the secondary water temperature of the steam generator less than or equal to 50°F above the RCS cold leg temperatures, or (2) the start of a centrifugal charging pump and its injection into a water-solid RCS.

The Maximum Allowed PORV Setpoint for the Cold Overpressure Mitigation System (COMS) is derived by analysis which models the performance of the COMS assuming various mass input and heat input transients. Operation with a PORV Setpoint less than or equal to the maximum Setpoint ensures that Appendix G criteria will not be violated with consideration for: (1) a maximum pressure overshoot beyond the PORV Setpoint which can occur as a result of time delays in signal processing and valve opening; (2) a 50°F heat transport effect made possible by the geometrical relationship of the RHR suction line and the RCS wide range temperature indicator used for COMS; (3) instrument uncertainties; and (4) single failure. To ensure mass and heat input transients more severe than those assumed cannot occur, Technical Specifications require lockout of both Safety Injection pumps and all but one centrifugal charging pump while in MODES 4, 5, and 6 with the reactor vessel head installed and disallow start of an RCP if secondary coolant temperature is more than 50°F above reactor coolant temperature. Exceptions to these requirements are acceptable as described below.

Operation above 350°F but less than 375°F with only centrifugal charging pump OPERABLE and no Safety Injection pumps OPERABLE is allowed for up to 4 hours. As shown by analysis, LOCAs occurring at low temperature, low pressure conditions can be successfully mitigated by the operation of a single centrifugal charging pump and a single RHR pump with no credit for accumulator injection. Given the short time duration and the condition of having only one centrifugal charging pump OPERABLE and the probability of a LOCA occurring during this time, the failure of the single centrifugal charging pump is not assumed.

Operation below 350°F but greater than 325°F with all centrifugal charging and Safety Injection pumps OPERABLE is allowed for up to 4 hours. During low pressure, low temperature operation all automatic Safety Injection actuation signals except Containment Pressure - High are blocked. In normal conditions, a single failure of the ESF actuation circuitry will result in the starting of at most one train of Safety Injection (one centrifugal charging pump, and one Safety Injection pump). For temperatures above 325°F, an overpressure event occurring as a result of starting two pumps can be successfully mitigated by

IV. Safety Evaluation of License Amendment Request 91-08 Proposed Changes

The proposed Technical Specifications changes are consistent with USNRC Generic Letter (GL) 90-06. GL 90-06 requests changes to Seabrook Station Technical Specification 3/4.4.4 "Relief Valves" and its associated Bases and Technical Specification 3/4.4.9.3 "Overpressure Protection Systems" and its associated Bases. The proposed revisions to Technical Specification 3.4.4 ACTION a. require that power be maintained to block valves which are closed to isolate PORVs which are exhibiting excessive seat leakage. By maintaining power to closed block valves when the PORVs are exhibiting excessive seat leakage the block valves can be readily opened to afford use of the PORVs in mitigating RCS pressure transients. If the block valves are inoperable, the proposed revisions to ACTION d. provide adequate measures to assure that a PORV will not become stuck open when a block valve is inoperable yet maintains the ability to use the PORVs for transient mitigation. The changes to Technical Specification 3/4.4.4. are intended to enhance the availability of the PORVs for mitigation of RCS pressure transients.

The changes to Technical Specification 3/4.4.9.3 provide enhanced operational flexibility through the use of a PORV in combination with a RHR suction relief valve for low temperature overpressure protection. Each of these relief valves, alone is capable of mitigating a design basis mass or heat addition transient as stated in the Bases for Technical Specification 3/4.4.9.3. The proposed revisions to ACTION b. reduce the allowed outage time for one of the two required overpressure protection devices from 7 days to 24 hours when in MODE 5 or 6, because the NRC has determined based on its review of low temperature overpressure transients that the potential for an overpressure transient is highest in these MODES.

The proposed changes to Technical Specifications 3/4.4.4. and 3/4.4.9.3 do not affect the functions of the PORVs in MODE 1, 2 or 3 or the Overpressure Protection System functions required in MODE 4 below 329°F, MODE 5 and MODE 6. There is no change proposed to the PORV actuation circuitry or to the PORV or block valve power supply configuration. There is no reduction in surveillance testing of the PORVs or Overpressure Protection Systems.

The proposed changes will result in an improvement in the availability of the PORVs and Overpressure Protection Systems to mitigate RCS pressure transients and will therefore enhance safe operation.

V. Determination of Significant Hazards for License Amendment Request 91-08 Proposed Changes

(1) The proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed changes to Technical Specification 3/4.4.4 are intended to increase the availability of the PORVs to mitigate RCS pressure transients. The proposed changes will not increase the probability of occurrence of an inadvertent opening of a pressurizer safety or relief valve which are analyzed in the Updated Final Safety Analysis Report (FSAR) Section 15.6.1. There is no change proposed to the PORV actuation circuitry or to the PORV or block valve power supply configuration.

The proposed changes to Technical Specification 3/4.4.9.3 are intended to increase the availability of equipment which is utilized to mitigate low temperature overpressure transients, by reducing the allowed outage time for such equipment in MODE 5 and 6.

Design Basis low temperature overpressure transients are initiated by inadvertent mass additions (e.g. a charging pump or Safety Injection (SI) pump) with no letdown, or by heat additions caused by the starting of an idle RCP with the secondary side more than 50°F warmer than the primary. The proposed changes to Technical Specification 3/4.4.9.3 will have no affect on the probability of occurrence of low temperature overpressure transient. The changes will improve the availability of equipment utilized to mitigate such a transient.

There is no increase in the consequences of an accident previously evaluated in the FSAR. The only accident analysis which take credit for the PORVs in mitigating the accident and its consequences is the Steam Generator Tube Rupture (SGTR) Accident. The FSAR description of this accident has been superseded by the SGTR analysis submitted to the NRC on April 16, 1991. In this analysis the PORVs are assumed to be utilized by the operators as required by Emergency Response Procedure E-3 to reduce RCS pressure and thus terminate flow to the faulted Steam Generator. The proposed changes to Technical Specification 3/4.4.4 which improve the availability of the PORVs, will not increase the consequences of an accident previously evaluated (i.e. the SGTR accident).

(2) The proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed changes to Technical Specifications 3/4.4.4 and 3/4.4.9.3 do not affect the functions of the PORVs in MODE 1, 2 or 3 or the Overpressure Protection System functions required in MODE 4 below 329°F, MODE 5 and MODE 6. There is no change proposed to the PORV actuation circuitry or to the PORV or block valve power supply configuration. There is no reduction in surveillance testing of the PORVs or Overpressure Protection Systems.

The proposed changes will result in an improvement in the availability of the PORVs and Overpressure Protection Systems to mitigate RCS pressure transients.

(3) The proposed changes do not result in a significant reduction in the margin of safety.

The margin of safety associated with the PORVs or the Overpressure Protection Systems is defined in the Bases for their corresponding Technical Specifications.

The Bases for Technical Specification 3/4.4.4 reads as follows:

3/4.4.4. RELIEF VALVES

The power-operated relief valves (PORVs) and steam bubble function to relieve RCS pressure during all design transients up to and including the design step load decrease with steam dump. Operation of the PORVs minimizes the undesirable opening of the spring-loaded pressurizer Code safety valves. Each PORV has a remotely operated block valve to provide a positive shutoff capability should a relief valve become inoperable. The PORVs and their associated block valves are powered from Class 1E power supply busses.

The proposed changes to Technical Specification 3/4.4.4 do not reduce the margin of safety defined in its Bases. The function of the PORVs and their block valves is not changed. The Bases for Technical Specification 3/4.4.4 is proposed to be clarified by specifying that automatic operation of the PORVs is not credited in any MODE 1, 2 or 3 transient and therefore the PORVs can be considered operable in either the automatic or manual mode.

The Bases for Technical Specification 3/4.4.9 in pertinent part reads as follows:

3/4.4.9 PRESSURE/TEMPERATURE LIMITS
COLD OVERPRESSURE PROTECTION

The OPERABILITY of two PORVs, or two RHR suction relief valves, or an RCS vent opening of at least 1.58 square inches ensures that the RCS will be protected from pressure transients which could exceed the limits of Appendix G to 10 CFR Part 50 when one or more of the RCS cold legs are less than or equal to 329°F. Either PORV or either RHR suction relief valve has adequate relieving capability to protect the RCS from overpressurization when the transient is limited to either: (1) the start of an idle RCP with the secondary water temperature of the steam generator less than or equal to 50°F above the RCS cold leg temperature, or (2) the start of a centrifugal charging pump and its injection into a water-solid RCS.

The proposed changes to Technical Specification 3/4.4.9.3 do not reduce the margin of safety defined in its Bases. The changes will enhance the availability of the Overpressure Protection System devices by reducing the current allowed outage time in MODE 5 or 6 from 7 days to 24 hours, thereby providing a greater level of safety. The Bases for Technical Specification 3/4.4.9.3 will be clarified by stating that a PORV in combination with a RHR suction relief valve is an acceptable configuration for cold overpressure protection. This combination is acceptable because, as indicated in the current Bases, "Either PORV or either RHR suction relief valve has adequate relieving capability to protect the RCS from overpressurization..."

In view of the preceding, NHY has determined that the Technical Specification changes proposed in License Amendment Request 91-08 do not involve a significant hazards consideration.

VI. Proposed Schedule for License Amendment Issuance and Effectiveness

New Hampshire Yankee requests NRC review of License Amendment Request 91-08 and issuance of a license amendment having immediate effectiveness by March 31, 1992.

As specified in Section I, the Technical Specification changes proposed herein were developed by a group of seven utilities comprising eight Westinghouse PWRs which utilize the PORVs or RHR suction relief valves for low temperature overpressure protection. NHY recommends that its License Amendment Request 91-08 be reviewed in conjunction with the reviews of the aforementioned group of licensees.

The Technical Specification changes proposed herein will enhance safe operation by improving the availability of safety-related equipment, the Power-Operated Relief Valves and Overpressure Protection Systems, which may be utilized in the mitigation of transients.

VII. Other Supporting Documentation

NHY Letter NYN-90217, "Response to Generic Letter 90-06" dated December 21, 1990 to USNRC.

New Hampshire
Yankee

Ted C. Feigenbaum
President and
Chief Executive Officer

NYN- 90217

December 21, 1990

United States Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Document Control Desk

References: (a) Facility Operating License No. NPF-86, Docket No. 50-443

(b) USNRC Generic Letter 90-06, dated June 25, 1990, "Resolution of Generic Issue 70, 'Power-operated Relief Valve and Block Valve Reliability', and Generic Issue 94, 'Additional Low-Temperature Overpressure Protection For Light-Water Reactors', Pursuant to 10 CFR 50.54(f)"

Subject: Response to Generic Letter 90-06

Gentlemen:

New Hampshire Yankee provides the following information in response to Generic Letter 90-06 regarding the pressurizer power-operated relief valves (PORVs) and block valves installed in Seabrook Station. This information addresses design, programmatic and technical specification requirements applicable to the PORVs and block valves.

The Seabrook Station PORVs are solenoid-valve-controlled, pressure actuated, poppet-type relief valves which do not depend upon control air systems for their operation. The block valves are flexible wedge, rising stem, motor-operated gate valves.

The Seabrook Station PORVs, block valves and associated components were designed to meet safety-grade requirements. Mechanically, the PORVs and block valves are Safety Class 1 components. Electrically, the PORV solenoids and the block valve motor-operators are designated Class 1E. The PORV and block valve control switches, selector switches and position indication are also designated Class 1E. Other electrical components in the PORV and block valve circuitry including cables, connectors and splices that are located in harsh environments are environmentally qualified. The PORV circuitry includes contacts from relays driven by non-safety-related signals associated with automatic control functions. These relays are not qualified but are similar to Class 1E relays. An analysis has been performed to demonstrate that no credible failure of these relays can create a condition which degrades the function of the Class 1E portion of the PORV circuitry.

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The PORVs and block valves at Seabrook Station are included within the scope of the NHY Operational Quality Assurance Program and are therefore listed in FSAR Table 3.2-2. The following programmatic requirements applicable to the PORVs and block valves have been implemented. Approved procedures implement maintenance requirements for the PORVs and block valves in accordance with manufacturer's recommendations. Maintenance is performed by trained maintenance personnel. The PORVs and block valves are included within the scope of the Inservice Testing Program for valves. The block valves are included within the scope of the Motor-Operated Valve Testing Program being developed in response to NRC Generic Letter 89-10. Complete replacement PORVs or block valves would be purchased, if needed, in accordance with the requirements of the original construction specification including applicable amendments. Replacement parts for the PORVs or block valves would be purchased, if needed, by reference to the original manufacturer or supplier's part number. Additionally, purchasing requirements have been pre-established for specific valve parts based upon a review of the safety function of each part with input from the original manufacturer and/or supplier. These requirements are imposed by the parts purchase order.

New Hampshire Yankee intends to propose plant-specific technical specification changes regarding PORV operability. The proposed changes will be based upon the model technical specifications provided as Attachment A-1 of Enclosure A to Generic Letter 90-06. Additionally, NHY intends to propose plant-specific technical specification changes relating to low temperature overpressure protection. These proposed changes will be based upon the model technical specifications provided as Attachment B-1 to Enclosure B of Generic Letter 90-06, but will reflect the fact that either the residual heat removal system (RHRS) suction relief valves or the PORVs can provide the required low temperature overpressure protection. The proposed technical specification changes described above will be submitted prior to startup following the first refueling outage.

New Hampshire Yankee is working with six other utilities in developing a common approach to the proposed technical specification changes associated with Generic Letter 90-06. The plants involved in this effort are: Wolf Creek, Vogtle, Comanche Peak, Millstone 3, Seabrook, Byron, Braidwood, and Callaway. A joint effort is facilitated by the similarity of plant types and technical specifications. All the plants in the group are Westinghouse PWRs which utilize the PORVs and RHRS suction relief valves for low temperature overpressure protection.

If you have any questions on this matter, please contact Mr. Geoffrey Kingston at (603) 474-9521, Extension 3371.

Very truly yours,

Ted C. Feigenbaum

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