ENCLOSURE 2

TECHNICAL SPECIFICATION CHANGES

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION

LIST OF AFFECTED PAGES

3/4 4-10
3/4 4-11
3/4 4-31
3/4 4-36
B 3/4 4-15

A1/038.N19

ENClosure ~~ATTACHMENT~~
ST-HL-AE-3642
PAGE 1 OF 8

3/4.4.4 RELIEF VALVES

LIMITING CONDITION FOR OPERATION

3.4.4 Both ~~All~~ 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 ~~more~~ 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 ~~COLD~~ SHUTDOWN within the following 6 ~~30~~ 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 ~~COLD~~ SHUTDOWN within the following 6 ~~30~~ hours.

c. With both PORVs ~~PORV(s)~~ inoperable due to causes other than excessive seat leakage, within 1 hour either restore each of the PORVs ~~PORV(s)~~ to OPERABLE status or close their associated block valves ~~valve(s)~~ and remove power from the block valves ~~valve(s)~~ and be in HOT STANDBY within the next 6 hours and HOT ~~COLD~~ SHUTDOWN within the following 6 ~~30~~ 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 the PORV; and (2) apply the ACTION b. or c. above, as appropriate, for the isolated PORV(s).~~

INSERT A

f. ~~e.~~ The provisions of Specification 3.0.4 are not applicable.

Enclosure
~~ATTACHMENT~~
ST-HL-AE-3642
PAGE 2 OF 8

INSERT A

d. With one block valve inoperable, within 1 hour restore the block valve to operable status or place its associated PORV in closed position; restore the 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.

e. With both block valves inoperable, within 1 hour restore the block valves to operable status or place the associated PORVs in closed position; restore at least one block valve to OPERABLE status within the next hour; restore the remaining 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.

~~ATTACHMENT~~ Enclosure
ST-HL-AE-3642
PAGE 3 OF 8

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. Performing a CHANNEL CALIBRATION on the actuation channel, and

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

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.

3/4.4.9 PRESSURE/TEMPERATURE LIMITS

REACTOR COOLANT SYSTEM

LIMITING CONDITION FOR OPERATION

3.4.9.1 The Reactor Coolant System (except the pressurizer) temperature and pressure shall be limited in accordance with the limit lines shown on Figures 3.4-2 and 3.4-3 during heatup, cooldown, criticality, and inservice leak and hydrostatic testing with:

a. A maximum heatup of 100°F in any 1-hour period,

b. A maximum cooldown of 100°F in any 1-hour period, and

c. A maximum temperature change of less than or equal to 10°F in any 1-hour period during inservice hydrostatic and leak testing operations above the heatup and cooldown limit curves.

APPLICABILITY: At all times.

ACTION:

With any of the above limits exceeded, restore the temperature and/or pressure to within the limit within 30 minutes; perform an engineering evaluation to determine the effects of the out-of-limit condition on the structural integrity of the Reactor Coolant System; determine that the Reactor Coolant System remains acceptable for continued operation or be in at least HOT STANDBY within the next 6 hours and reduce the RCS T_{avg} and pressure to less than 200°F and 500 psig, respectively, within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.9.1.1 The Reactor Coolant System temperature and pressure shall be determined to be within the limits at least once per 30 minutes during system heatup, cooldown, and inservice leak and hydrostatic testing operations.

4.4.9.1.2 The reactor vessel material irradiation surveillance specimens shall be removed and examined, to determine changes in material properties, as required by 10 CFR Part 50, Appendix H, in accordance with the schedule in Table 4.4-5. The results of these examinations shall be used to update Figures 3.4-2, ~~and~~ 3.4-3 and 3.4-4

Enclosure
~~ATTACHMENT~~
ST-HL-AE-
PAGE 5 OF 8

OVERPRESSURE PROTECTION SYSTEMS

LIMITING CONDITION FOR OPERATION

3.4.9.3 At least one of the following Overpressure Protection Systems shall be OPERABLE:

a. Two power-operated relief valves (PORVs) with lift settings which do not exceed the limit established in Figure 3.4-4, or

b. The Reactor Coolant System (RCS) depressurized with an RCS vent of greater than or equal to 2.0 square inches.

APPLICABILITY: MODES 4 and 5, and MODE 6 when the head is on the reactor vessel. ~~with the reactor vessel head on~~

ACTION:

a. With one PORV inoperable in MODE 4, restore the inoperable PORV to OPERABLE status within 7 days or depressurize and vent the RCS through at least ≥ 2.0 square inch vent within the next 8 hours.

- Insert B

~~b.~~ c. With both PORVs inoperable, depressurize and vent the RCS through at least a 2.0 square inch vent within 8 hours.*

~~c.~~ d. In the event either the PORVs 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 6.9.2 within 30 days. The report shall describe the circumstances initiating the transient, the effect of the PORVs or RCS vent(s) on the transient, and any corrective action necessary to prevent recurrence.

e. The provisions of Specification 3.0.4 are not applicable.

* This ACTION may be suspended for up to 7 days to allow functional testing to verify PORV operability. During this test period, operation of systems or components which could result in an RCS mass or temperature increase will be administratively controlled. During the ASME stroke testing of two inoperable PORVs, cold overpressurization mitigation will be provided by two RHR discharge relief valves associated with two OPERABLE and operating RHR loops which have the auto closure interlock bypassed [or deleted]. If one PORV is inoperable, cold overpressure mitigation will be provided by the OPERABLE PORV and one RHR discharge relief valve associated with an OPERABLE and operating RHR loop which has the auto closure interlock bypassed [or deleted].

Enclosure
ATTACHMENT
ST-HL-AE-3642
PAGE 6 OF 8

INSERT B

b. With one PORV inoperable in MODES 5 or 6 with the head on the reactor vessel, restore the inoperable PORV to OPERABLE status within 24 hours, or complete depressurization and venting of the RCS through at least a 2 square inch vent within the next 8 hours.*

Enclosure
~~ATTACHMENT~~
ST-HL-AE-3642
PAGE 7 OF 8

LOW TEMPERATURE OVERPRESSURE PROTECTION (Continued)

overshoot beyond the PORV Setpoint which can occur as a result of time delays in signal processing and valve opening, instrument uncertainties, and single failure. To ensure that mass and heat input transients more severe than those assumed cannot occur, Technical Specifications require lockout of all high head safety injection pumps while in MODE 5 and MODE 6 with the reactor vessel head on. All but one high head safety injection pump are required to be locked out in MODE 4. Technical Specifications also require lockout of the positive displacement pump and all but one charging pump while in MODES 4, 5, and 6 with the reactor vessel head installed and disallow start of an RCP if secondary temperature is more than 50°F above primary temperature.

Insert C

The Maximum Allowed PORV Setpoint for the COMS will be updated based on the results of examinations of reactor vessel material irradiation surveillance specimens performed as required by 10 CFR Part 50, Appendix H, and in accordance with the schedule in Table 4.4-5.

3/4.4.10 STRUCTURAL INTEGRITY

The inservice inspection and testing programs for ASME Code Class 1, 2, and 3 components ensure that the structural integrity and operational readiness of these components will be maintained at an acceptable level throughout the life of the plant. These programs are in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50.55a(g) except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i).

Components of the Reactor Coolant System were designed to provide access to permit inservice inspections in accordance with Section XI of the ASME Boiler and Pressure Vessel Code, 1974 Edition and Addenda through Winter 1975.

3/4.4.11 REACTOR VESSEL HEAD VENTS

Reactor vessel head vents are provided to exhaust noncondensible gases and/or steam from the Reactor Coolant System that could inhibit natural circulation core cooling. The OPERABILITY of at least two reactor vessel head vent paths ensures that the capability exists to perform this function.

The valve redundancy of the reactor vessel head vent paths serves to minimize the probability of inadvertent or irreversible actuation while ensuring that a single failure of a vent valve, power supply, or control system does not prevent isolation of the vent path.

The function, capabilities, and testing requirements of the reactor vessel head vents are consistent with the requirements of Item II.B.1 of NUREG-0737, "Clarification of TMI Action Plan Requirements," November 1980.

Enclosure
~~ATTACHMENT~~
ST-HL-AE-3642
PAGE 8 OF 8

INSERT C

Administrative controls and two RHR relief valves will be used to provide cold overpressure protection (COMS) during the ASME stroke testing of two administratively declared inoperable PORVs. During the performance of the PORV functional test, two RHR trains will be OPERABLE and in operation with the auto closure interlock bypassed [or deleted] to provide COMS. Each RHR relief valve provides sufficient capacity to relieve the flow resulting from the maximum charging flow with concurrent loss of letdown. With one PORV inoperable, COMS will be provided during the ASME test by the OPERABLE PORV and one RHR relief valve associated with an OPERABLE and operating RHR train which has the auto closure interlock bypassed [or deleted]. The RHR pump design developed head, corresponding to the design flowrate of 3400 gpm, is 205 ft and the actual pump developed pressure is 115 psig. This results in actuation of the RHR relief valves at a RCS pressure of approximately 485 psig (600 psig - 115 psig). Therefore two OPERABLE and operating RHR trains or one OPERABLE PORV and one OPERABLE and operating RHR train will provide adequate and redundant overpressure protection. Use of the RHR relief valves will maintain the RCS pressure below the low temperature endpoint of the Technical Specification limit curve (550 psig, ref. Technical Specification fig. 3.4-2). With regard to the MODE 6 applicability of this Technical Specification, the statement "with the head on the reactor vessel" means any time the head is installed with or without tensioning the RPV studs.

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SIGNIFICANT HAZARDS EVALUATION

HL&P has incorporated the recommendations provided in Enclosure A and Enclosure B of Generic Letter 90-06. The description of changes and associated justifications are given in Enclosure 1 of this letter. These changes improve the clarity and accuracy of the Technical Specifications and increase the reliability and availability of the PORVs. HL&P has evaluated the proposed changes to the Technical Specifications and has determined that these changes do not represent a significant hazards consideration based on the criteria established in 10 CFR 50.92(c). Incorporation of the recommendations of Generic Letter 90-06 and performance of the proposed PORV operability test will not:

(1) involve a significant increase in the probability or consequences of an accident previously evaluated in the Safety Analyses Report.

GL 90-06 Amendment:

The incorporation of the changes provided in Enclosure 2 are consistent with the recommendations of Generic Letter 90-06 and as such improve the clarity and accuracy of the Technical Specifications and do not increase the probability or consequences of any accident previously evaluated in the Safety Analysis Report.

PORV Operability Verification:

Administrative controls and procedures have been structured to aid the operator in controlling RCS pressure during low temperature operation. However to provide a backup to the operator, an automatic system is provided to maintain pressures within allowable limits.

Evaluations presented in the Safety Analyses Report have shown that one pressurizer PORV is sufficient to prevent violation of the limits established by ASME III, Appendix G due to anticipated mass and heat input transients. Redundant protection against a low temperature overpressure event is provided by using two pressurizer PORVs to mitigate potential pressure transients. The automatic system is required only during low temperature water solid operation when it is manually armed and automatically actuated. The STPEGS PORVs are safety-related and Class 1E powered. They are designed in accordance with the ASME Code, are qualified via the Westinghouse pump and valve operability program, and are seismically and environmentally qualified.

Low temperature overpressure events have been previously evaluated in section 5.2.2.11 of the STPEGS UFSAR. These events result from potential increases in mass or heat input into the Reactor Coolant System (RCS) due to a charging/letdown flow mismatch or inadvertent Reactor Coolant Pump actuation with a temperature mismatch between the RCS and the secondary side of the Steam Generators of 50°F. The probability of a low temperature overpressure event due to these initiators is unchanged since the proposed test does not involve any changes to plant systems, equipment or controls. During the ASME stroke test of two inoperable PORVs, overpressure protection will be provided by operation of two RHR trains. Each RHR discharge relief valve has sufficient capacity to relieve the flow resulting from the maximum charging flow and concurrent loss of letdown.

These RHR relief valves have a setpoint of 600 psi and will actuate at an RCS pressure of 485 psig due to the 115 psig RHR pump head. Therefore, the two OPERABLE and operating RHR trains, with the RHR auto closure interlock bypassed [or deleted], will provide adequate and redundant cold overpressure protection during the proposed test. If only one PORV is inoperable, redundant cold overpressure protection will be provided by the OPERABLE PORV and one OPERABLE and operating RHR train with the RHR auto closure interlock bypassed [or deleted]. Operator action to terminate the overpressure event, actuation of the OPERABLE PORV, actuation of one or both of the RHR discharge relief valves, or actuation of the PORV(s) being tested will assure that the accident consequences remain unchanged. The consequences of a low temperature overpressure event, as previously evaluated in the UFSAR, show that the allowable limits as established by ASME III, Appendix G will not be exceeded and therefore Reactor Pressure Vessel integrity and plant safety will be maintained.

During operations with the RCS water solid and the COMS PORV(s) unavailable, administrative controls will be implemented to minimize the potential for and severity of postulated overpressure transients. These controls incorporate the following:

a. When RCS pressure is being maintained by the low pressure letdown control valve, the normal letdown orifices are bypassed but not isolated.

b. Only one centrifugal charging pump (CCP) will be allowed to be operable; this minimizes the potential for a mass input overpressure transient.

c. Administrative controls will be in place to insure that the High Head Safety Injection (HHSI) pumps will not operate during water solid operations with the PORV(s) inoperable to minimize the potential for creating a cold overpressure transient.

d. The RPV pressure will be controlled at the minimum value necessary to perform the required testing of the inoperable PORV(s) (325-400 psig).

e. A Reactor Coolant Pump shall not be started with one or more of the RCS cold leg temperatures less that or equal to 350°F unless the secondary side water temperature of each steam generator is less than 50°F above the RCS cold leg temperature (ref. Technical Specification 3.4.1.4.1.a).

f. The positive displacement pump will be demonstrated inoperable during the water solid operations to minimize the potential for a mass input overpressure event.

g. The RHR auto closure interlock will be bypassed [or deleted] during water solid operations to prevent the loss of letdown capability which could produce a mass input overpressure transient.

h. The Pressurizer Heaters will be inoperable during water solid operations to minimize the potential for a heat input overpressure transient.

As a result of the above administrative controls, the operability of the OPERABLE PORV, the operability of the RHR discharge relief valve(s), and the expected operation of the PORV(s) being tested, there is no significant increase in the probability or consequences of a low temperature overpressure event, as previously evaluated in the UFSAR. The allowable limits, as established by ASME III, Appendix G, will not be exceeded and therefore Reactor Pressure Vessel integrity and plant safety will be maintained.

(2) create the possibility of a new or different kind of accident from any previously analyzed.

GL 90-06 Amendment:

The incorporation of the changes provided in Enclosure 2 are consistent with the recommendations of Generic Letter 90-06. These changes and the additional changes to allow verification of PORV operability during MODES 5 and 6 increase the clarity and accuracy of the Technical Specifications and do not create the possibility of a new or different kind of accident from any previously analyzed.

PORV Operability Verification:

Low temperature overpressure events resulting from inadvertent mass or heat input into the RCS have been previously evaluated in the STPEGS UFSAR. The use of additional administrative controls during water solid operations with one or both COMS PORVs inoperable does not result in the creation of a new or different kind of accident. Application of these additional controls while performing the required testing of the inoperable COMS PORV(s) ensures that the potential for a low temperature overpressure event is minimized.

(3) involve a significant reduction in the margin of safety.

GL 90-06 Amendment:

The incorporation of the changes provided in Enclosure 2 are consistent with the recommendations of Generic Letter 90-06. These changes and the additional changes to allow verification of PORV operability during MODES 5 and 6 increase the clarity and accuracy of the Technical Specifications and do not involve a significant reduction in the margin of safety.

PORV Operability Verification:

The margin of safety is provided by the difference between the ASME Appendix G limits and the actual pressure capability of the Nuclear Grade Reactor Pressure Vessel. The margins contained within the ASME Appendix G limits provide assurance that vessel integrity is maintained under all operating conditions. ASME Section III, Appendix G, establishes guidelines and limits for RCS pressure primarily for low temperature conditions (≤ 350°F). Transient analyses have been performed to determine the maximum pressure for the postulated (credible) worst case mass input and heat input events.

The mass input transient is divided into two parts for plant operation in Mode 4 (> 200°F) and Mode 5 (≤ 200°F). In Mode 4, the mass input transient assumes the operation of one high-head safety injection (HHSI) pump and one centrifugal charging pump (CCP) delivering normal charging flow through the reactor coolant pump (RCP) seals with letdown isolated. It should be noted that the safety injection (SI) signal which isolates letdown also isolates the normal charging line. In Mode 5, the mass input transient assumes the operation of one CCP delivering flow through the RCP seals with letdown isolated.

The heat input analysis was performed for an inadvertent RCP start assuming that the RCS was water solid at the initiation of the event and that a 50°F mismatch existed between the RCS and the secondary side of the Steam Generators. (At lower temperatures, the mass input case is the limiting transient condition.)

Both heat input and mass input analyses took into account the single failure criteria and therefore, only one PORV was assumed to be available for pressure relief. The evaluation of the transient results concludes that the allowable limits will not be exceeded and therefore cold overpressure transients will not constitute an impairment to vessel integrity and plant safety.

These margins are incorporated into the STPEGS Technical Specifications and are unchanged by the proposed PORV test. The administrative limits provided in the Technical Specification figure also contain additional margin due to accounting for possible instrument errors, inaccuracy and sensing delays, and valve opening time. The possibility of a cold overpressure event during the testing of the inoperable PORV(s) is considered remote. Even in the unlikely event that such an event were to occur, prompt operator action, actuation of the OPERABLE PORV, actuation of the RHR relief valve(s), or operation of the PORV(s) being tested will terminate the event before reaching the Appendix G limits. Consequently, the margins provided by the ASME III, Appendix G limits will be maintained.