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U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Document Control Desk

Subject: Oconee Nuclear Station
Docket Numbers 50-269, 270, and 287
Technical Specification Bases (TSB) Change

Please find attached revision to TSB 3.4.3, which was approved by Station Management on April 17, 2001 and implemented on April 17, 2001. This change incorporates the analyzed conditions for "valving in" an idle LPI train in the Bases Background and LCO for TS 3.4.3, RCS P/T Limits.

Attachment 1 contains the new Technical Specification Bases page and Attachment 2 contains the markup version of the Bases page.

If any additional information is needed, please contact Larry E. Nicholson, (864-885-3292)

Very truly yours,

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A001

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Attachment 1

# B 3.4 REACTOR COOLANT SYSTEM (RCS)

## B 3.4.3 RCS Pressure and Temperature (P/T) Limits

BASES

BACKGROUND

All components of the RCS are designed to withstand effects of cyclic loads due to system pressure and temperature changes. These loads are introduced by startup (heatup) and shutdown (cooldown) operations, power transients, and reactor trips. This LCO limits the pressure and temperature changes during RCS heatup and cooldown, within the design assumptions and the stress limits for cyclic operation.

Figures 3.4.3-1 through 3.4.3-9 contain P/T limit curves for heatup, cooldown, and leak and hydrostatic (LH) testing. Tables 3.4.3-1 and 3.4.3-2 contain data for the maximum rate of change of reactor coolant temperature. The minimum temperature indicated in the P/T limit curves and tables of 60°F is the lowest unirradiated nil ductility reference temperature ($RT_{NDT}$) of all materials in the reactor vessel. This temperature (60°F) is the minimum allowable reactor pressure vessel temperature if any head closure stud is not fully detensioned. There is no minimum allowable temperature limit for the reactor vessel if all of the studs are fully detensioned.

Figures 3.4.3-1, 3.4.3-2, 3.4.3-4, 3.4.3-5, 3.4.3-7 and 3.4.3-8 define an acceptable region for normal operation. The usual use of the curves is operational guidance during heatup or cooldown maneuvering, when pressure and temperature indications are monitored and compared to the applicable curve to determine that operation is within the allowable region.

The LCO establishes operating limits that provide a margin to brittle failure of the reactor vessel and piping of the reactor coolant pressure boundary (RCPB). The vessel is the component most subject to brittle failure, and the LCO limits apply mainly to the vessel. The limits do not apply to the pressurizer, which has different design characteristics and operating functions.

10 CFR 50, Appendix G (Ref. 1), requires the establishment of P/T limits for material fracture toughness requirements of the RCPB materials. Reference 1 requires an adequate margin to brittle failure during normal operation, anticipated operational occurrences, and system hydrostatic tests. It mandates the use of the American Society of Mechanical Engineers (ASME), Boiler and Pressure Vessel Code, Section III, Appendix G (Ref. 2).

Linear elastic fracture mechanics (LEFM) methodology is used to determine the stresses and material toughness at locations within the RCPB. The LEFM methodology follows the guidance given by 10 CFR 50, Appendix G; ASME Code, Section III, Appendix G; and Regulatory Guide 1.99 (Ref. 3).

BASES

BACKGROUND (continued)

Material toughness properties of the ferritic materials of the reactor vessel are determined in accordance with ASTM E 185 (Ref. 4), and additional reactor vessel requirements. These properties are then evaluated in accordance with Reference 2.

The actual shift in the nil ductility reference temperature ($RT_{NDT}$) of the vessel material will be established periodically by evaluating the irradiated reactor vessel material specimens, in accordance with ASTM E 185 (Ref. 5) and Appendix H of 10 CFR 50 (Ref. 5). The operating P/T limit curves will be adjusted, as necessary, based on the evaluation findings and the recommendations of Reference 2.

The P/T limit curves are composite curves established by superimposing limits derived from stress analyses of those portions of the reactor vessel and head that are the most restrictive. At any specific pressure, temperature, and temperature rate of change, one location within the reactor vessel will dictate the most restrictive limit. Across the span of the P/T limit curves, different locations are more restrictive, and, thus, the curves are composites of the most restrictive regions.

The heatup curve represents a different set of restrictions than the cooldown curve because the directions of the thermal gradients through the vessel wall are reversed. The thermal gradient reversal alters the location of the tensile stress between the outer and inner walls.

The calculation to generate the LH testing curve uses different safety factors (per Ref. 2) than the heatup and cooldown curves.

The P/T limit curves and associated temperature rate of change limits are developed in conjunction with stress analyses for large numbers of operating cycles and provide conservative margins to nonductile failure. Although created to provide limits for these specific normal operations, the curves also can be used to determine if an evaluation is necessary for an abnormal transient.

As stated in the tables associated with this LCO, reactor coolant (RC) temperature is cold leg temperature if one or more RC pumps are in operation; otherwise, it is the LPI cooler outlet temperature. An analysis examined the effects of initiating flow through a previously idle LPI train (i.e. either placing a train of LPI in operation or swapping from one train to the other) when none of the RC pumps are operating. The analysis assumed the initial temperature of the fluid entering the vessel to be the lowest expected temperature in an idle LPI cooler. As RC fluid is pumped through the system and returns to the reactor vessel, the temperature increases to a "stable" value. The duration of the temperature excursion is dependent on LPI flow and volume of the piping system. This analysis has determined that the brief temperature excursion caused by the fluid initially in the idle LPI train can be accommodated if, at the time the LPI header is put in service, the RCS pressure is less than 295 psig (Instrument Uncertainty Adjusted). This value is less limiting than the

BASES

BACKGROUND (continued)

LPI initiation pressure limit imposed by procedures to protect the LPI system from overpressure. The brief temperature excursion does not place the reactor vessel outside of the bounds of the stress analyses. (Ref. 8, FTI Doc. 32-5010572-00 Allowable LPI Pressures For LPI Cooler Swap).

The criticality limit curve includes the Reference 1 requirement that it be 40°F above the heatup curve or the cooldown curve, and not less than the minimum permissible temperature for LH testing. However, the criticality curve is not operationally limiting; a more restrictive limit exists in LCO 3.4.2, "RCS Minimum Temperature for Criticality."

The consequence of violating the LCO limits is that the RCS has been operated under conditions that can result in brittle failure of the RCPB, possibly leading to a nonisolable leak or loss of coolant accident. In the event these limits are exceeded, an evaluation must be performed to determine the effect on the structural integrity of the RCPB components. The ASME Code, Section XI, Appendix E (Ref. 6) provides a recommended methodology for evaluating an operating event that causes an excursion outside the limits.

APPLICABLE SAFETY ANALYSES

The P/T limits are not derived from accident analyses. They are prescribed during normal operation to avoid encountering pressure, temperature, and temperature rate of change conditions that might cause undetected flaws to propagate and cause nonductile failure of the RCPB, an unanalyzed condition. Reference 1 establishes the methodology for determining the P/T limits. Since the P/T limits are not derived from any accident analysis, there are no acceptance limits related to the P/T limits. Rather, the P/T limits are acceptance limits themselves since they preclude operation in an unanalyzed condition.

RCS P/T limits satisfy Criterion 2 of 10 CFR 50.36 (Ref. 7).

LCO

The three elements of this LCO are:

a. The limit curves for heatup and cooldown,

b. Limits on the rate of change of temperature, and

c. Allowable RC pump combinations.

The LCO is modified by three Notes. Note 1 states that for leak tests of the RCS and leak tests of connected systems where RCS pressure and temperature are controlling, the RCS may be pressurized to the limits of the specified figures. Note 2 states that for thermal steady state hydro tests required by ASME Section XI RCS may be pressurized to the limits Specification 2.1.2 and the specified figures. The limits on the rate of change of reactor coolant temperature RCS P/T Limits are the same ones

BASES

LCO (continued)

used for normal heatup and cooldown operations. Note 3 states the RCS P/T limits are not applicable to the pressurizer.

The LCO limits apply to all components of the RCS, except the pressurizer. These limits define allowable operating regions and permit a large number of operating cycles while providing a wide margin to nonductile failure.

Table 3.4.3-1 includes temperature rate of change limits with allowable pump combinations for RCS heatup while Table 3.4.3-2 includes temperature rate of change limits with allowable pump combinations for RCS cooldown. The breakpoints between temperature rate of change limits in these two tables are selected to limit reactor vessel thermal gradients to acceptable limits. The breakpoint between allowable pump combinations was selected based on operational requirements and are used to determine the change of RCS pressure associated with the change in number of operating reactor coolant pumps.

The limits for the rate of change of temperature control the thermal gradient through the vessel wall and are used as inputs for calculating the heatup, cooldown, and LH P/T limit curves. Thus, the LCO for the rate of change of temperature restricts stresses caused by thermal gradients and also ensures the validity of the P/T limit curves.

The limits on allowable RC pump combinations controls the pressure differential between the vessel wall and the pressure measurement point and are used as inputs for calculating the heatup, cooldown and LH P/T limit curves. Thus, the LCO for the allowable RC pump combinations restricts the pressure at the vessel wall and ensures the validity of the P/T limit curves.

The LPI cooler outlet temperature during the brief period of stabilization does not need to be considered when determining heatup or cooldown rates or RCS P/T conditions when an LPI train is placed in operation with no operating RCPs. The period of stabilization is the time required to fully displace the stagnant fluid in the idle LPI train. The time required for stabilization is a function of LPI flow rate. Operating procedures control both placing a train of LPI in service and swapping trains of LPI to limit the duration of the temperature transient to a value that has been shown to be acceptable. (Ref. 8, FTI Doc. 32-5010572-00 Allowable LPI Pressures For LPI Cooler Swap).

BASES

LCO (continued)

Violating the LCO limits places the reactor vessel outside of the bounds of the stress analyses and can increase stresses in other RCPB components. The consequences depend on several factors, as follows:

a. The severity of the departure from the allowable operating P/T regime or the severity of the rate of change of temperature;

b. The length of time the limits were violated (longer violations allow the temperature gradient in the thick vessel walls to become more pronounced); and

c. The existences, sizes, and orientations of flaws in the vessel material.

APPLICABILITY

The RCS P/T limits Specification provides a definition of acceptable operation for prevention of nonductile failure in accordance with 10 CFR 50, Appendix G (Ref. 1). Although the P/T limits were developed to provide guidance for operation during heatup or cooldown (MODES 3, 4, and 5) or LH testing, their applicability is at all times in keeping with the concern for nonductile failure. The limits do not apply to the pressurizer.

During MODES 1 and 2, other Technical Specifications provide limits for operation that can be more restrictive than or can supplement these P/T limits. LCO 3.4.1, "RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits"; LCO 3.4.2, "RCS Minimum Temperature for Criticality"; and Safety Limit (SL) 2.1, "SLs," also provide operational restrictions for pressure and temperature and maximum pressure. MODES 1 and 2 are above the temperature range of concern for nonductile failure, and stress analyses have been performed for normal maneuvering profiles, such as power ascension or descent.

ACTIONS

A.1 and A.2

Operation outside the P/T limits during MODE 1, 2, 3, or 4 must be corrected so that the RCPB is returned to a condition that has been verified by stress analyses.

The 30 minute Completion Time reflects the urgency of restoring the parameters to within the analyzed range. Most violations will not be severe, and the activity can be accomplished in this time in a controlled manner.

Besides restoring operation to within limits, an evaluation is required to determine if RCS operation can continue. The evaluation must verify the RCPB integrity remains acceptable and must be completed before continuing operation. Several methods may be used, including comparison with pre-analyzed transients in the stress analyses, new analyses, or inspection of the components. The evaluation must be

BASES

ACTIONS

A.1 and A.2 (continued)

completed, documented, and approved in accordance with established plant procedures and administrative controls.

ASME Code, Section XI, Appendix E (Ref. 6) may be used to support the evaluation. However, its use is restricted to evaluation of the vessel beltline. The evaluation must extend to all components of the RCPB.

The 72 hour Completion Time is reasonable to accomplish the evaluation. The evaluation for a mild violation is possible within this time, but more severe violations may require special, event specific stress analyses or inspections. A favorable evaluation must be completed before continuing to operate.

Condition A is modified by a Note requiring Required Action A.2 to be completed whenever the Condition is entered. The Note emphasizes the need to perform the evaluation of the effects of the excursion outside the allowable limits. Restoration alone per Required Action A.1 is insufficient because higher than analyzed stresses may have occurred and may have affected the RCPB integrity.

B.1 and B.2

If a Required Action and associated Completion Time of Condition A are not met, the unit must be brought to a lower MODE because: (a) the RCS remained in an unacceptable pressure and temperature region for an extended period of increased stress, or (b) a sufficiently severe event caused entry into an unacceptable region. Either possibility indicates a need for more careful examination of the event, best accomplished with the RCS at reduced pressure and temperature. With reduced pressure and temperature conditions, the possibility of propagation of undetected flaws is decreased.

If the required restoration activity cannot be accomplished within 30 minutes, Required Action B.1 and Required Action B.2 must be implemented to reduce pressure and temperature.

If the required evaluation for continued operation cannot be accomplished within 72 hours, or the results are indeterminate or unfavorable, action must proceed to reduce pressure and temperature as specified in Required Actions B.1 and B.2. A favorable evaluation must be completed and documented before returning to operating pressure and temperature conditions. However, if the favorable evaluation is accomplished while reducing pressure and temperature conditions, a return to power operation may be considered without completing Required Action B.2.

Pressure and temperature are reduced by bringing the unit to MODE 3 within 12 hours and to MODE 5 within 36 hours. The allowed Completion

BASES

ACTIONS

B.1 and B.2 (continued)

Times are reasonable, based on operating experience, to reach the required MODE from full power conditions in an orderly manner and without challenging unit systems.

C.1 and C.2

Actions must be initiated immediately to correct operation outside of the P/T limits at times other than MODE 1, 2, 3, or 4, so that the RCPB is returned to a condition that has been verified acceptable by stress analysis.

The immediate Completion Time reflects the urgency of initiating action to restore the parameters to within the analyzed range. Most violations will not be severe, and the activity can be accomplished within this time in a controlled manner.

In addition to restoring operation to within limits, an evaluation is required to determine if RCS operation can continue. The evaluation must verify that the RCPB integrity remains acceptable and must be completed prior to entry into MODE 4. Several methods may be used, including comparison with pre-analyzed transients in the stress analysis, or inspection of the components.

ASME Code, Section XI, Appendix E (Ref. 6), may also be used to support the evaluation. However, its use is restricted to evaluation of the vessel beltline.

Condition C is modified by a Note requiring Required Action C.2 to be completed whenever the Condition is entered. The Note emphasizes the need to perform the evaluation of the effects of the excursion outside the allowable limits. Restoration alone, per Required Action C.1, is insufficient because higher than analyzed stresses may have occurred and may have affected RCPB integrity.

SURVEILLANCE REQUIREMENTS

SR 3.4.3.1

Verification that operation is within limits is required every 30 minutes when RCS pressure or temperature conditions are undergoing planned changes.

This Frequency is considered reasonable in view of the control room indication available to monitor RCS status. Thirty minutes permits assessment and correction for minor deviations within a reasonable time. Surveillance for heatup, cooldown, or LH testing may be discontinued when the definition given in the relevant plant procedure for ending the activity is satisfied.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.4.3.1 (continued)

This SR is modified by a Note that requires this SR to be performed only during system heatup, cooldown, and LH testing.

REFERENCES

1. 10 CFR 50, Appendix G.
2. ASME, Boiler and Pressure Vessel Code, Section III, Appendix G.
3. Regulatory Guide 1.99, Revision 2, May 1988.
4. ASTM E 185-82, July 1982.
5. 10 CFR 50, Appendix H.
6. ASME, Boiler and Pressure Vessel Code, Section XI, Appendix E.
7. 10 CFR 50.36.
8. FTI Doc. 32-5010572-00, Allowable LPI Pressures For LPI Cooler Swap.

Attachment 2

# B 3.4 REACTOR COOLANT SYSTEM (RCS)

## B 3.4.3 RCS Pressure and Temperature (P/T) Limits

BASES

BACKGROUND

All components of the RCS are designed to withstand effects of cyclic loads due to system pressure and temperature changes. These loads are introduced by startup (heatup) and shutdown (cooldown) operations, power transients, and reactor trips. This LCO limits the pressure and temperature changes during RCS heatup and cooldown, within the design assumptions and the stress limits for cyclic operation.

Figures 3.4.3-1 through 3.4.3-9 contain P/T limit curves for heatup, cooldown, and leak and hydrostatic (LH) testing. Tables 3.4.3-1 and 3.4.3-2 contain data for the maximum rate of change of reactor coolant temperature. The minimum temperature indicated in the P/T limit curves and tables of 60°F is the lowest unirradiated nil ductility reference temperature ($RT_{NDT}$) of all materials in the reactor vessel. This temperature (60°F) is the minimum allowable reactor pressure vessel temperature if any head closure stud is not fully detensioned.

There is no minimum allowable temperature limit for the reactor vessel if all of the studs are fully detensioned.

Figures 3.4.3-1, 3.4.3-2, 3.4.3-4, 3.4.3-5, 3.4.3-7 and 3.4.3-8 define an acceptable region for normal operation. The usual use of the curves is operational guidance during heatup or cooldown maneuvering, when pressure and temperature indications are monitored and compared to the applicable curve to determine that operation is within the allowable region.

The LCO establishes operating limits that provide a margin to brittle failure of the reactor vessel and piping of the reactor coolant pressure boundary (RCPB). The vessel is the component most subject to brittle failure, and the LCO limits apply mainly to the vessel. The limits do not apply to the pressurizer, which has different design characteristics and operating functions.

10 CFR 50, Appendix G (Ref. 1), requires the establishment of P/T limits for material fracture toughness requirements of the RCPB materials. Reference 1 requires an adequate margin to brittle failure during normal operation, anticipated operational occurrences, and system hydrostatic tests. It mandates the use of the American Society of Mechanical Engineers (ASME), Boiler and Pressure Vessel Code, Section III, Appendix G (Ref. 2).

Linear elastic fracture mechanics (LEFM) methodology is used to determine the stresses and material toughness at locations within the RCPB. The LEFM methodology follows the guidance given by 10 CFR 50, Appendix G; ASME Code, Section III, Appendix G; and Regulatory Guide 1.99 (Ref. 3).

BASES

BACKGROUND (continued)

Material toughness properties of the ferritic materials of the reactor vessel are determined in accordance with ASTM E 185 (Ref. 4), and additional reactor vessel requirements. These properties are then evaluated in accordance with Reference 2.

The actual shift in the nil ductility reference temperature ($RT_{NDT}$) of the vessel material will be established periodically by evaluating the irradiated reactor vessel material specimens, in accordance with ASTM E 185 (Ref. 5) and Appendix H of 10 CFR 50 (Ref. 5). The operating P/T limit curves will be adjusted, as necessary, based on the evaluation findings and the recommendations of Reference 2.

The P/T limit curves are composite curves established by superimposing limits derived from stress analyses of those portions of the reactor vessel and head that are the most restrictive. At any specific pressure, temperature, and temperature rate of change, one location within the reactor vessel will dictate the most restrictive limit. Across the span of the P/T limit curves, different locations are more restrictive, and, thus, the curves are composites of the most restrictive regions.

The heatup curve represents a different set of restrictions than the cooldown curve because the directions of the thermal gradients through the vessel wall are reversed. The thermal gradient reversal alters the location of the tensile stress between the outer and inner walls.

The calculation to generate the LH testing curve uses different safety factors (per Ref. 2) than the heatup and cooldown curves.

The P/T limit curves and associated temperature rate of change limits are developed in conjunction with stress analyses for large numbers of operating cycles and provide conservative margins to nonductile failure. Although created to provide limits for these specific normal operations, the curves also can be used to determine if an evaluation is necessary for an abnormal transient.

Insert Attached sheet

The criticality limit curve includes the Reference 1 requirement that it be 40°F above the heatup curve or the cooldown curve, and not less than the minimum permissible temperature for LH testing. However, the criticality curve is not operationally limiting; a more restrictive limit exists in LCO 3.4.2, "RCS Minimum Temperature for Criticality."

The consequence of violating the LCO limits is that the RCS has been operated under conditions that can result in brittle failure of the RCPB, possibly leading to a nonisolable leak or loss of coolant accident. In the event these limits are exceeded, an evaluation must be performed to determine the effect on the structural integrity of the RCPB components. The ASME Code, Section XI, Appendix E (Ref. 6) provides a recommended methodology for evaluating an operating event that causes an excursion outside the limits.

reactor coolant

As stated in the tables associated with this LCO, (RC) temperature is cold leg temperature if one or more RC pumps are in operation; otherwise, it is the LPI cooler outlet temperature. An analysis ~~has been performed that~~ examined the effects of initiating flow through a previously idle LPI train (i.e. either placing a train of LPI in operation or swapping from one train to the other) when none of the RC pumps are operating. The analysis assumed the initial temperature of the fluid entering the vessel to be the lowest expected temperature in an idle LPI cooler. As ~~reactor coolant~~ RC fluid is pumped through the system and returns to the reactor vessel, the temperature increases to a "stable" value. The duration of the temperature excursion is dependent on LPI flow and volume of the piping system. This analysis has determined that the brief temperature excursion caused by the fluid initially in the idle LPI train can be accommodated if, at the time of the LPI header is put in service, the RCS pressure is less than 295 psig

**(Instrument Uncertainty Adjusted). This value is less limiting than the LPI initiation pressure limit imposed by procedures to protect the LPI system from overpressure. The brief temperature excursion ~~will~~ does not place the reactor vessel outside of the bounds of the stress analyses. (Ref. 8, FTI Doc 32-5010572-00 Allowable LPI Pressures For LPI Cooler Swap)**

Insert in Background

BASES

LCO (continued)

The limits for the rate of change of temperature control the thermal gradient through the vessel wall and are used as inputs for calculating the heatup, cooldown, and LH P/T limit curves. Thus, the LCO for the rate of change of temperature restricts stresses caused by thermal gradients and also ensures the validity of the P/T limit curves.

The limits on allowable RC pump combinations controls the pressure differential between the vessel wall and the pressure measurement point and are used as inputs for calculating the heatup, cooldown and LH P/T limit curves. Thus, the LCO for the allowable RC pump combinations restricts the pressure at the vessel wall and ensures the validity of the P/T limit curves.

Insert attached sheet

Violating the LCO limits places the reactor vessel outside of the bounds of the stress analyses and can increase stresses in other RCPB components. The consequences depend on several factors, as follows:

a. The severity of the departure from the allowable operating P/T regime or the severity of the rate of change of temperature;

b. The length of time the limits were violated (longer violations allow the temperature gradient in the thick vessel walls to become more pronounced); and

c. The existences, sizes, and orientations of flaws in the vessel material.

APPLICABILITY

The RCS P/T limits Specification provides a definition of acceptable operation for prevention of nonductile failure in accordance with 10 CFR 50, Appendix G (Ref. 1). Although the P/T limits were developed to provide guidance for operation during heatup or cooldown (MODES 3, 4, and 5) or LH testing, their applicability is at all times in keeping with the concern for nonductile failure. The limits do not apply to the pressurizer.

During MODES 1 and 2, other Technical Specifications provide limits for operation that can be more restrictive than or can supplement these P/T limits. LCO 3.4.1, "RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits"; LCO 3.4.2, "RCS Minimum Temperature for Criticality"; and Safety Limit (SL) 2.1, "SLs," also provide operational restrictions for pressure and temperature and maximum pressure. MODES 1 and 2 are above the temperature range of concern for nonductile failure, and stress analyses have been performed for normal maneuvering profiles, such as power ascension or descent.

Add to LCO

~~When determining compliance with the P/T limits~~ when an LPI train is placed in operation with no operating RCPs, the LPI cooler outlet temperature during the brief period of stabilization does not need to be considered when determining heatup or cooldown rates or RCS P/T conditions. The period of stabilization is the time required to fully displace the stagnant fluid in the idle LPI train. The time required for stabilization is a function of LPI flow rate. Operating procedures control both placing a train of LPI in service and swapping trains of LPI to limit the duration of the temperature transient to a value that has been shown to be acceptable. (Ref. FTI Doc 32-5010572-00 Allowable LPI Pressures For LPI Cooler Swap)

BASES

ACTIONS

C.1 and C.2 (continued)

Condition C is modified by a Note requiring Required Action C.2 to be completed whenever the Condition is entered. The Note emphasizes the need to perform the evaluation of the effects of the excursion outside the allowable limits. Restoration alone, per Required Action C.1, is insufficient because higher than analyzed stresses may have occurred and may have affected RCPB integrity.

SURVEILLANCE REQUIREMENTS

SR 3.4.3.1

Verification that operation is within limits is required every 30 minutes when RCS pressure or temperature conditions are undergoing planned changes.

This Frequency is considered reasonable in view of the control room indication available to monitor RCS status. Thirty minutes permits assessment and correction for minor deviations within a reasonable time.

Surveillance for heatup, cooldown, or LH testing may be discontinued when the definition given in the relevant plant procedure for ending the activity is satisfied.

This SR is modified by a Note that requires this SR to be performed only during system heatup, cooldown, and LH testing.

REFERENCES

1. 10 CFR 50, Appendix G.
2. ASME, Boiler and Pressure Vessel Code, Section III, Appendix G.
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4. ASTM E 185-82, July 1982.
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6. ASME, Boiler and Pressure Vessel Code, Section XI, Appendix E.
7. 10 CFR 50.36.
8. FTI Doc. 32-5010572-00, Allowable LPI Pressures for LPI Cooler Swap