NRC 2001-0010 10 CFR 50.90

March 19, 2001

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Ladies/Gentlemen:

DOCKETS 50-266 AND 50-301
SUPPLEMENT 11 TO APPLICATION FOR AMENDMENT TO
FACILITY OPERATING LICENSE APPENDIX A:
TECHNICAL SPECIFICATIONS IMPROVEMENT PROJECT
RESPONSE TO RAI ON ITS SECTIONS 3.3.2 THROUGH 3.3.5 AND FOLLOWUP QUESTIONS
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

On November 15, 1999, Wisconsin Electric Power Company (WE), then licensee for the Point Beach Nuclear Plant (PBNP), submitted an application to amend Appendix A, Technical Specifications, for Facility Operating Licenses DPR-24 and DPR-27 for Point Beach Nuclear Power Plant, Units 1 and 2, respectively (reference letter NPL 99-0669). The application proposed to convert the Point Beach Current Technical Specifications (CTS) to the Point Beach Improved Technical Specifications (ITS). That application contained documentation for ITS Chapters 1.0 and 2.0 and Sections 3.0 through 3.9. Documentation for ITS Chapters 4.0 and 5.0 was enclosed with Supplement 1 to the PBNP ITS submittal dated March 15, 2000 (reference letter NPL 2000-0142).

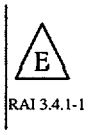
In a letter dated November 17, 2000, the NRC issued a Request for Additional Information (RAI) to Nuclear Management Company, LLC (NMC) on ITS Section 3.3. On February 15, 2001, at a meeting between NRC and plant staff, the NRC staff requested followup information regarding previous RAI responses.

Attachment 1 of this letter includes the NMC response to the staff's questions related to ITS Sections 3.3.2 through 3.3.5, in the above referenced RAI, and to the staff's followup questions. The response to ITS Section 3.3.1 of the RAI was provided to the NRC in Supplement 9, dated February 6, 2001 (letter NPL 2001-0032). In some instances, this response includes changes that are required to the original submittal, including changes to the Current Technical Specification (CTS) markups, Descriptions of Change (DOC), NUREG markups, proposed ITS and associated Bases, Justifications for Deviation (JFD), and No Significant Hazard Considerations (NSHC).

A001

These changes are discussed in the response to each question and are included in the attachment. Pages containing the changes required to the DOC, JFD, and NSHC are identified by "Rev. E".

The changes required to the CTS, NUREG, and ITS markups are identified as follows (example):



The revision bar identifies the section that has been revised; the E in the triangle identifies revision E; and the RAI number identifies which RAI question the revision relates to. The old pages in the original submittal should be replaced with the new pages enclosed with this letter, following the instructions of attachment 2.

Additional changes to the conversion package for the subject ITS Sections have been identified as a result of ITS reviews by NMC staff and Amendment approvals that have occurred after the original ITS submittal. These additional changes have been included (where necessary) in response to each RAI question for completeness and are clearly identified in the new pages enclosed with this letter.

NMC has determined that this supplement does not involve a significant hazards consideration, authorize a significant change in the types or total amounts of effluent release, or result in any significant increase in individual or cumulative occupational radiation exposure. Therefore, NMC concludes that the proposed supplement meets the categorical exclusion requirements of 10 CFR 51.22(c)(9) and that an environmental impact appraisal need not be prepared.

NMC is notifying the State of Wisconsin of this supplement by transmitting a copy of this letter, and its attachments, to the Public Service Commission of Wisconsin.

Other supplements to the PBNP ITS submittal, in response to previous RAIs, are listed for reference:

- Supplement 2 dated June 15, 2000 (ITS sections 2.0, 3.1, 3.2, 3.5; letter NPL 2000-0260)
- Supplement 3 dated June 19, 2000 (ITS section 3.6; letter NPL 2000-0271)
- Supplement 4 dated July 28, 2000 (ITS section 3.8; letter NPL 2000-0341)
- Supplement 5 dated August 17, 2000 (ITS sections 3.4, 3.9; letter NPL 2000-0371)
- Supplement 6 dated September 14, 2000 (ITS section 5.5; letter NPL 2000-0411)
- Supplement 7 dated October 19, 2000 (ITS sections 3.6, 3.7.4, 3.7.5; letter NPL 2000-0465)
- Supplement 8 dated December 21, 2000 (ITS section 1.0; letter NPL 2000-0549)
- Supplement 9 dated February 6, 2001 (ITS sections 3.3.1 and 5.0; letter NPL 2001-0032)
- Supplement 10 dated February 23, 2001 (ITS section 3.7; letter NRC 2001-0004)

To the best of my knowledge and belief, the statements contained in this document are true and correct. In some respects, these statements are not based entirely on my personal knowledge, but on information furnished by cognizant NMC employees, contractor employees, and/or

consultants. Such information has been reviewed in accordance with company practice, and I believe it to be reliable.

Should you have any questions on this submittal or require additional information, please contact me.

Sincerely,

Mark Reddemann
Site Vice President

Subscribed to and sworn before me
on this 16th day of March, 2001

Notary Public, State of Wisconsin

My Commission expires on February 27, 2005.

JG/ajr

Attachments

Enclosure

cc: NRC Regional Administrator
NRC Resident Inspector
NRC Project Manager
PSCW

DOCKETS 50-266 AND 50-301
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
TECHNICAL SPECIFICATIONS IMPROVEMENT PROJECT
SECTIONS 3.3.2 THROUGH 3.3.5 AND FOLLOWUP STAFF QUESTIONS
POINT BEACH NUCLEAR PLANT UNITS 1 AND 2

The following information is provided in response to the Nuclear Regulatory Commission staff's requests for additional information dated November 17, 2000.

Each question is restated on the following pages with NMC's response following.

3.3.2-01 No DOC, JFD 20
ITS 3.3.2 Table 3.3.2-1. Allowable Value
CTS 15.3.5, Table 15.3.5.1 -Setting Limit

The Setting Limits in the CTS are expressed at trip setpoints (see CTS bases). The ITS is proposed to use Allowable Values instead. Furthermore, the STS format presumes the existence of a plant specific setpoint analysis that sets the context for the form (i.e., allowable values, trip setpoints, or both) in which the ESFAS settings are expressed in the ITS. In the absence of this analysis the expression of the settings in the ITS cannot be unambiguously used to determine instrument operability from measurements of component errors. The Point Beach Allowable Values do appear to be derived from such an analysis as reference to setpoint analysis was deleted from the Bases, and numerical Allowable Values are not provided in the ITS for certain RTS and ESFAS functions. Comment: This change is not discussed in the DOC and the plant-specific values do not appear to have been derived using a formal setpoint methodology. Provide justification for using Allowable Value instead of Trip Setpoints. Ensure that the values used are those that were calculated by the plant-specific setpoint analysis. Include a reference to the setpoint analysis in the Bases.

Response:

Per PBNP DG-I01, Instrument Setpoint Methodology, the Setting Limits specified in the CTS are equivalent to Allowable Values. The requested justification is incorporated into the enclosed submittal changes.

3.3.2-02 DOC LA.1, M.3 JFD 2, JFD 35, JFD 10
ITS 3.3.2, Table 3.3.2-1, Functions 1.a, 3.a, 4.a, 4.d, 4.e, 6.d, 6.e, Completion Times, B.1, B.2.1, B.2.2, D.2, D.2.1, D.2.2, E.1, E.2.1, E.2.2, G.1, G.2
CTS 15.3.5, Table 15.3.5-3, Functions 1.a, 3.a.i, 3.a.iii (inserted) Table 15.3.5-4, Functions 1.b, 2.a, 2.b

The CTS specifies the Total Number of Channels, the Number of Channels to Trip, and the Minimum Operable Channels. The STS specifies only the Required Channels which is equal to

the total number of channels. For most functions the ITS sets the Required Channels equal to Total Number of Channels. For Functions listed above the ITS specifies the CTS Minimum Operable Channels instead of the Total Number of Channels. Comment: The STS format is to use the total number of channels in the Required Channels column. Use of the CTS Minimum Operable Channels is inconsistent with the STS format. Use of Minimum Operable Channels for these functions while Total Number of Channels is used for all other functions also creates an internal inconsistency in the ITS. Revise the ITS to use total number of channels. This will also require revision of the related ITS actions to be consistent with the condition of one channel inoperable and the STS.

Response:

For the functions listed above, the CTS does not provide required actions if one channel is inoperable, resulting in one less than the total number of channels being operable. The actions required by the CTS for these functions are related to the number of channels required by column 3, "Minimum Operable Channels." Despite this fact, the ITS has been revised to use the total number of channels for each of the above functions, except ITS Table 3.3.2-1, Functions 4.a and 6.e. Function 4.a, Manual Steam Line Isolation, incorporates two switches, one for each MSIV. Therefore, to effect a manual steam line isolation of both loops requires both switches (i.e., 1/loop). Function 6.e, AFW – Trip of all MFW pumps, has not been retained in ITS (See JFD 40).

Adopting the total number of channels for the above functions also requires revision of the associated required actions to provide compensatory measures consistent with the level of degradation for one inoperable channel.

3.3.2-03 JFD 06
ITS 3.3.2 Table 3.3.2-1 Function 5.b. Allowable Value

The CTS provides no Trip Setpoint for the Steam Generator Water Level High function. The ITS also provides no Allowable Value for this function, contrary to the STS. Comment: The standard format requires that a Trip Setpoint and / or Allowable Value be provided for the function. Providing no setpoint is functionally equivalent to deleting the function which is unacceptable. Provide the proper Trip Setpoint and / or Allowable Value consistent with the resolution of comment 3.3.2-01.

Response:

The High Steam Generator Water Level Feedwater Isolation is not credited in the safety analysis for the mitigation of an accident. Therefore, a field setting for the High Steam Generator Water Level Feedwater Isolation function has been included in Table 3.3.2-1. This field setting was developed outside the scope of the setpoint methodology and is listed in documents provided by the NSSS supplier.

3.3.2-04 DOC A5
ITS 3.3.2, Table 3.3.2-1, All Functions except 1.d and 1.e - Applicability
CTS 15.3.5, Table 15.3.5-3, All Functions except 1.c and 1.d - Permissible Bypass Conditions, Table 15.3.5-4, All Functions - Permissible Bypass Conditions

The CTS does not specify Permissible Bypass Conditions for any ESFAS functions except Low Steam Generator Pressure (1.c) and Low Pressurizer Pressure (1.d). The ITS adopts the less restrictive STS Applicability for these functions. Comment: This is a less restrictive change which is classified as "A". Reclassify change as "L".

Response:

Per CTS definition of Operability, a system, subsystem, train, component, or device shall be operable or have operability when it is capable of performing its function(s) as analyzed in the safety analysis report. Each of the analyzed accidents can be detected by one or more ESFAS Functions. One of the ESFAS Functions is the primary actuation signal for that accident. An ESFAS Function may be the primary actuation signal for more than one type of accident. An ESFAS Function may also be a secondary, or backup, actuation signal for one or more other accidents. For example, Pressurizer Pressure-Low is a primary actuation signal for small loss of coolant accidents (LOCAs) and a backup actuation signal for steam line breaks (SLBs) outside containment. Functions such as manual initiation, not specifically credited in the accident safety analysis, are qualitatively credited in the safety analysis and in the NRC staff approved licensing basis for the unit. The following discussions describe the conditions under which each Function is required to be operable, consistent with current licensing basis and the proposed ITS. These explanations document the equivalency between the existing CTS requirements and the proposed ITS requirements and thereby justify the basis that this change is administrative.

Manual and automatic initiation of SI, CI and CS must be operable in MODES 1, 2, and 3. In these MODES, there is sufficient energy in the primary and secondary systems to warrant automatic initiation of ESF systems. Manual Initiation is also required in MODE 4 even though automatic actuation is not required. In this MODE, adequate time is available to manually actuate required components in the event of a DBA, but because of the large number of components actuated on a SI, CI or CS, actuation is simplified by the use of the manual actuation push buttons. Automatic actuation logic and actuation relays must be operable in MODE 4 to support system level manual initiation. These Functions are not required to be operable in MODES 5 and 6 because there is adequate time for the operator to evaluate unit conditions and respond by manually starting individual systems, pumps, and other equipment to mitigate the consequences of an abnormal condition or accident. Unit pressure and temperature are very low and many ESF components are administratively locked out or otherwise prevented from actuating to prevent inadvertent overpressurization of unit systems.

Manual and automatic initiation of steam line isolation must be operable in MODES 1, 2, and 3 when there is sufficient energy in the RCS and SGs to have an SLB or other accident. This could

result in the release of significant quantities of energy and cause a cooldown of the primary system. The Steam Line Isolation Function is required in MODES 2 and 3 unless all MSIVs are closed and de-activated. In MODES 4, 5, and 6, there is insufficient energy in the RCS and SGs to experience an SLB or other accident releasing significant quantities of energy.

Feedwater Isolation Functions must be operable in MODES 1, 2 and 3 except when all MFRVs, and associated bypass valves are closed and de-activated. In MODES 4, 5, and 6, the MFW System is not in service and this Function is not required to be operable.

AFW Actuation on SG Water Level-Low Low must be operable in MODES 1, 2, and 3 to ensure that the SGs remain the heat sink for the reactor. This Function does not have to be operable in MODES 5 and 6 because there is not enough heat being generated in the reactor to require the SGs as a heat sink. In MODE 4, AFW actuation does not need to be operable because either AFW or residual heat removal (RHR) will already be in operation to remove decay heat or sufficient time is available to manually place either system in operation.

AFW Actuation on Undervoltage Bus A01 and A02 and Trip of all MFW Pumps must be operable in MODES 1 and 2. These Functions ensure that at least one SG is provided with water to serve as the heat sink to remove reactor decay heat and sensible heat in the event of an accident. In MODES 3, 4, and 5, the MFW pumps may be normally shut down, and thus neither pump trip is indicative of a condition requiring automatic AFW initiation.

The Condensate Isolation Function must be operable in MODES 1, 2 and 3, except when all MFRVs and associated bypass valves are closed and de-activated. This Function is not required to be operable in MODES 4, 5 and 6, because there is insufficient energy in the secondary side of the unit to have an accident.

The Pressurizer Pressure SI Block Function must be operable in MODES 1, 2, and 3 to allow automatic initiation of SI actuation on Pressurizer Pressure-Low or Steam Line Pressure-Low signals. This Function does not have to be operable in MODE 4, 5, or 6 because system pressure must already be below the setpoint for the requirements of the heatup and cooldown curves to be met.

Therefore, adopting the STS MODES of Applicability for each of these functions is an administrative change.

3.3.2-05 DOC L.2, M.9
ITS 3.3.2, Actions C, D, F
CTS 15.3.5, Table 15.3.5-3, Table 15.3.5-4, Footnote **

The CTS allows continued operation with one channel inoperable if the affected channel is placed in trip within one hour. The ITS actions adopt the STS requirement to place the channel in trip within 6 hours. Comment: The extended Completion Time in ITS Action D, is justified in

DOC L.2 based upon the analysis contained in WCAP-10271-P-A, Supplement 2. This is consistent with the basis for the STS. The Safety Evaluation Reports for WCAP-10271 require that applicants for the proposed Technical Specification changes for individual plants must confirm the applicability of the generic analysis of the WCAP. The applicability of the WCAP-10271 analysis to Point Beach has not been discussed. Adopting the WCAP as the basis for Completion Times is a technical change that should be the subject of a separate technical evaluation. Note that the extended Completion Time for ITS Actions C and F appear to have been selected to be consistent with the other Completion Times discussed in DOC L.2, although this is not stated in the related DOC, M.9. Revise ITS Completion Times to be consistent with the CTS.

Response:

The Completion Time of Required Action D.1 has been changed to one hour, consistent with the CTS requirement. Justification for this change is provided in JFD 70.

The CTS does not provide actions for an inoperable train of Automatic Actuation Logic, thereby requiring entry into LCO 15.3.0.B. DOC L.5 has been written to provide justification for adoption of the less restrictive ISTS Actions and associated Completion Times (Conditions C and F).

Additionally, as a result of our response to RAI 3.3.2-2, the STS requirement for two channels per bus of Undervoltage Bus A01 and A02 AFW Actuation has been adopted. This change has necessitated the adoption of required actions commensurate with the level of degradation for one inoperable channel. Therefore, the NUREG-1431 actions for one inoperable Undervoltage Bus A01 and A02 AFW Actuation channel have been adopted with the following exception. The STS Required Actions require the inoperable channel to be placed in trip within 6 hours, as justified in WCAP-10271-P-A, Supplement 2. Since Point Beach has not performed a plant specific evaluation to confirm the applicability of the generic analysis contained in WCAP-10271, this justification cannot be used. However, the proposed ITS Required Actions will still require the inoperable channel to be placed in trip in 6 hours. This is necessitated by the length of time required to properly place this channel in trip, as dictated by Point Beach specific design and operational restrictions for this equipment. Therefore, the 6 hour Completion Time of STS Required Action I.1 has been retained in ITS, but with a plant-specific justification, as discussed above and in the Bases of LCO 3.3.2.

3.3.2-06 DOC L.1, M.9, M.3, JFD 1 (beyond scope item 24, similar to beyond scope item 7)
ITS 3.3.2, Action D, C, G - Note
CTS 15.3.5, Table 15.3.5-3, Table 15.3.5-4, New Footnotes ##, ###

The CTS does not allow taking an inoperable channel out of the tripped condition to allow surveillance testing of other channels. The ITS allows for this. The ITS modifies the STS provision that the inoperable channel may be placed in bypass.

This comment is a placeholder for beyond scope item 24. It remains open pending technical branch disposition. In addition to technical branch comments, respond to the following.

The provision to allow taking the inoperable channel out of the tripped condition is justified in DOC L.1 based upon the analysis contained in WCAP-10271-P-A, Supplement 2. This is consistent with the basis for the STS. The Safety Evaluation Reports for WCAP-10271 require that applicants for the proposed Technical Specification changes for individual plants must confirm the applicability of the generic analysis of the WCAP. The applicability of the WCAP-10271 analysis to Point Beach has not been discussed. Furthermore, the STS allowance is based upon a design which includes bypass provisions. The bypass function includes interlocks that prevent disabling one channel at a time. The basis for accepting the STS note allowing bypass in a design that lacks the STS assumed protective interlocks has not been discussed. This is a technical change that should be the subject of a separate technical evaluation. Note that Actions C and G apply to functions the Automatic Actuation Logic which are not explicitly addressed in the CTS (Automatic Actuation Logics and AFW initiation on MFW trip). The application of the Note to the Actions C and G is not discussed in DOC M.9 or M.3, but for Action C the ITS Bases reference the WCAP. The Completion Times for Action G appear to have been selected to be consistent with the other completion times that are based upon the WCAP. Also note that the ITS Bases and JFD 1 indicate that the bypass referenced in the Note to Action C.1 does not exist in the Point Beach design. Delete the note allowing removal of inoperable channels from the tripped condition.

Response:

The Notes modifying STS LCO 3.3.2, Conditions C, D, E, G and I have not been retained in ITS. Furthermore, upon deletion of these notes, the required actions of Condition D become duplicative of those in Condition E. Therefore, Condition E has not been retained in ITS, and the Containment Pressure High – Containment Spray actuation function has been modified to refer to Condition D. Justification for these changes is presented in JFD 67.

3.3.2-07 DOC M.10 (beyond scope item 98)
JFD 44
ITS 3.3.2, Table 3.3.2-1, Function 7
CTS 15.3.5, Table 15.3.5-4, Insert 4

The CTS does not include the Condensate Isolation function. This is added into the ITS.

This comment is a placeholder for beyond scope item 98. It remains open pending technical branch disposition. In addition to technical branch comments, respond to the following.

Consider comments 3.3.2-05 and 3.3.2-06 in the review of this change to CTS.

Response:

With regard to RAI 3.3.2-5, the Completion Time of Required Action D.1 has been changed to one hour. The 6 hour Completion Time of the STS, being based on the generic analysis of WCAP-10271, was not appropriate for use for PBNP without plant specific confirmation of its applicability to PBNP.

With regard to RAI 3.3.2-6, the Notes modifying STS LCO 3.3.2, Conditions D and G, have not been retained in ITS. Justification for these changes is provided in JFD 67.

3.3.2-08 Not used.

3.3.2-09 DOC A.5, L.3, A.10
ITS 3.3.2, Table 3.3.2-1, Surveillance Requirements
CTS 15.4.1, Table 15.4.1-1, Functions 7, 8, 10, 11, 27,44

The CTS requires surveillance under all plant conditions. The ITS adopts the STS philosophy of requiring surveillance only in the specified Applicable Modes for each function. Comment: These changes are classified as more administrative, however, based upon a literal reading of the CTS they are indeed less restrictive. The DOCs do not discuss the reasons why these less restrictive changes are acceptable. Provide technical justification for the changes in the DOC.

Response:

Although CTS Table 15.4.1-1 states for many of the functions that the surveillance's are required in "ALL" plant conditions, CTS 15.4.0.1 states, "Surveillance requirements shall be met during all times that the system or component is required to be operable." Additionally, the CTS defines Operability as when a system, subsystem, train, component, or device is capable of performing its functions as analyzed in the safety analysis report. Therefore, adopting the STS philosophy requiring surveillance only when the respective Function is required to be operable, is <u>not</u> a less restrictive change. Point Beach interpretation of the CTS does not require surveillances on functions when they are not required to be operable in accordance with the assumptions made in the safety analysis.

3.3.2-10 JFD 13
ITS 3.3.2, Table 3.3.2-1, Functions 1.b, 1.c, 1.d, 1.e, 2.b, 2.c, 3.b, 4.b, 4.c, 4.d, 4.e, 5.a, 5.b, 6.b, 7.a, 7.b, 8 - Surveillance Requirements
CTS 3.3.2,Table14.4.1-1, Functions7, 8, 10, 27, 44 - Test

The CTS and STS require quarterly functional testing of sense channels. The ITS does not require functional testing (SR 3.3.2.3), instead a Master Relay Test (SR 3.3.2.4) is required. The STS

requires a Master Relay Test for logic and actuation channels, but the ITS specifies a channel operational test (COT). Comment: It appears that references to SR 3.3.2.3 and SR 3.3.2.4 have been reversed. A COT not a Master Relay Test is appropriate for sense channels. The Master Relay Test is appropriate for logic channels. In Table 3.3.2-1 specify SR 3.3.2.4 for logic channels and SR 3.3.2.3 sense channels.

Response:

The references to SR 3.3.2.3 and SR 3.3.2.4 have been corrected such that a Master Relay Test is required on actuation logic and a Channel Operational Test (COT) is required on analog channels.

3.3.2-11 No DOC
ITS 3.3.2, SR 3.3.2.2 - Note

The STS requires testing of the ESFAS Actuation Logic. The ITS adopts the STS note on this surveillance stating that the continuity check may be excluded. Comment: A basis for adopting the STS note has not been provided. Provide a DOC justifying the addition of the note to SR 3.3.2.2.

Response:

Point Beach ESFAS design does not include a semi-automatic tester nor the capability to pulse test the master relay coils for continuity. The CTS requirement to perform a logic test does not include a continuity check of the output devices. Therefore, adopting a note allowing the exclusion of the continuity check from the performance of the Actuation Logic Test is consistent with the CTS.

Additional Corrections Required to ITS 3.3.2:

Additional corrections to the conversion package for ITS 3.3.2 have been identified as a result of ITS reviews by plant staff.

1. Per Errata #91, the deletion of CTS 15.4.1, Table 15.4.1-1, Item 27, Note (9), was miscategorized as an "LA" change. DOC L.6 has been written to replace DOC LA.3, as justification for the deletion of CTS Table 15.4.1-1, Note (9).

2. Per Errata #111, ITS Table 3.3.2, Table 3.3.2-1, Function 3.b, Containment Isolation (CI) – Automatic Actuation Logic, Actuation Logic Test (SR 3.3.2.2) should not be retained in ITS. The configuration of the CI logic at Point Beach includes inputs from Safety Injection (SI) actuation (excluding manual SI) and Manual CI actuation. The contacts in the CI logic that come from the SI actuation are tested as part of the SI Automatic

Actuation Logic Slave Relay Test surveillance requirement. The contacts in the CI logic from the Manual CI pushbuttons are tested as part of the Manual CI TADOT surveillance requirement. Additionally, the master and slave relays which actuate to effect the containment isolation on a SI actuation or Manual CI signal are tested via the Master and Slave Relay surveillance requirements. Therefore, all of the components of the CI logic are tested and an Actuation Logic Test is not required. As a result of this comment, the requirement to perform an Actuation Logic Test on the Containment Isolation (CI) – Automatic Actuation Logic has not been retained in ITS.

3. Per Errata #150, ITS Table 3.3.2, Table 3.3.2-1, Function 4.b, Steam Line Isolation (SLI) – Automatic Actuation Logic, Master Relay Test (SR 3.3.2.4) should not be retained in ITS. The logic associated with the Steam Line Isolation function is comprised of two trains, with each train providing output to each MSIV. An output from a train to an MSIV is comprised of one contact from one relay. Therefore, there is no master / slave relay configuration. The requirement to perform a Slave Relay Test on the Steam Line Isolation - Automatic Actuation Logic and Actuation Relays will ensure the outputs from each train are verified operable. As a result of this comment, the requirement to perform a Master Relay Test on the SLI – Automatic Actuation Logic has not been retained in ITS.

4. Per Errata #160, NUREG-1431, LCO 3.3.2, Table 3.3.2-1, Functions 6.g, AFW – Trip of All MFW Pumps, should not be retained in ITS. Point Beach ESFAS design does not include this function as an AFW actuation signal. As a result of this comment, the AFW – Trip of All MFW Pumps Actuation has not been retained in ITS. This also results in the deletion of the associated Required Actions and Bases. Justification for not retaining this function is contained in JFD 40.

5. Per Errata #161, ITS Table 3.3.2-1, Function 2.c, Containment Spray – Containment Pressure High High, inaccurately states the number of required channels as "3 per set." A more accurate statement would be "2 sets of 3." As a result of this comment, the required number of Containment Spray – Containment Pressure High High channels has been changed to "2 sets of 3," consistent with the CTS and the STS format.

3.3.3-01 DOC M.1
ITS 3.3.3 Table 3.3.3-1, Function 24
CTS 15.3.5, Table 13.3.5-5, Function 6

The CTS specifies that there are 2 AFW flow channels and a minimum of 1 AFW flow channel required Operable. The STS requires 2 AFW flow channels to be operable. The ITS requires 1 channel/steam generator to be Operable. Comment: The ITS requirement may allow operation with only one flow channel, depending upon the arrangement of the AFW system. Adopt the STS requirement of two AFW flow channels.

Response:

ITS LCO 3.3.3, Table 3.3.3-1, Function 24 has been changed to require 2 channels of Auxiliary Feedwater Flow. This change does not result in a change to the number of required channels of Auxiliary Feedwater Flow, as there are only 2 channels, 1 per steam generator, as discussed in the Bases. This change will however, prevent unrestricted operation with no AFW flow indications available, as discussed in the response to RAI 3.3.3-2.

3.3.3-02 DOC L.4
ITS 3.3.3 Table 3.3.3-1, Function 24
CTS 15.3.5, Table 13.3.5-5, Function 6

The CTS specifies that the plant be placed in hot shutdown if at least 1 AFW flow channel is not Operable. The ITS allows operation to continue indefinitely with no Operable AFW flow indication. DOC L.4 justifies this because AFW flow is a Category II backup indication. Comment: If AFW flow is included in Table 3.3.3-1, it should be either Category I or Class A. If it is not Category I, then it must be a Class A variable. Therefore, it should be treated with equal importance as other PAM variables. Adopt the STS requirement to enter Condition F if no channels are operable.

Response:

ITS LCO 3.3.3, Table 3.3.3-1, Function 24 has been changed to require 2 channels of Auxiliary Feedwater Flow. This change does not result in a change to the number of required channels of Auxiliary Feedwater Flow, as discussed in the response to RAI 3.3.3-1. As a result of this change, ITS LCO 3.3.3, Condition C will be entered, if both channels of AFW flow indication are inoperable, requiring restoration of one channel to an operable status in 7 days. Additionally, Condition F will be entered if the required action and associated completion time of Condition C is not met, requiring the unit be in MODE 3 in 6 hours and MODE 4 in 12 hours. Thus, unrestricted operation with no AFW flow indications available is prevented.

3.3.3-05 DOC A.5
ITS 3.3.3, Surveillance Requirements
CTS 15.4.1, Table 15.4.1-1, Plant Conditions When Required

The CTS requires surveillance under all plant conditions. The ITS adopts the STS philosophy of requiring surveillance only in the specified Applicable Modes for each function. Comment: These changes are classified as administrative, however, based upon a literal reading of the CTS they are indeed less restrictive. Reclassify the change.

Response:

Although CTS Table 15.4.1-1 states, for many of the listed functions, that the surveillances are required in "ALL" plant conditions, this seemingly broad requirement is reduced in scope by the requirement contained in CTS 15.4.0.1. CTS 15.4.0.1 states, "Surveillance requirements shall be met during all times that the system or component is required to be operable." Additionally, CTS defines Operability as when a system, subsystem, train, component, or device is capable of performing its functions as analyzed in the safety analysis report. Therefore, the CTS does not require surveillances to be performed on functions when they are not required to be operable in accordance with the assumptions made in the safety analysis. The overarching CTS requirement of CTS Table 15.4.1-1 is that surveillances are required in "ALL" plant conditions wherein that system or component is required to be operable. Consequently, adopting the STS philosophy requiring surveillance only when the respective Function is required to be operable, is consistent with the CTS and is <u>not</u> a less restrictive change.

3.3.3-06 Not used.

3.3.3-07 JFD 3
ITS 3.3.3, SR 3.3.3.3, Note
CTS 15.4.1, Table 15.4.1, Function 25, Note 14

The CTS includes a note that the high range radiation monitor calibration is a simple verification that the channel responds to a source. The ITS includes a note that calibration is not required. The ITS bases explains that verification of response to a source is required. Comment: The CTS requirement has not been clearly carried over to the ITS note. As stated the requirement for calibration is ambiguous. SR 3.3.3.3 says that calibration is not required, the ITS Bases say that calibration is required, but it is a special kind of calibration. Retain the CTS wording in the Note on SR 3.3.3.3.

Response:

The wording of the Note modifying SR 3.3.3.3, Channel Calibration, has been changed to stipulate that the Channel Calibration of the Containment Area Radiation (High Range) detectors

shall consist of verification of a response to a source. This is consistent with the wording of CTS Table 15.4.1-1, Function 25, Note 14.

Additional Corrections Required to ITS 3.3.3:

Additional corrections to the conversion package for ITS 3.3.3 have been identified as a result of ITS reviews by plant staff.

1. Per Errata #11, ITS Section 5.6 was renumbered as a result of not adopting portions of the Specification. Because ITS LCO 3.3.3 makes reference to the PAM Report (NUREG-1431, Specification 5.6.8), ITS LCO 3.3.3, Required Actions B.1 and G.1 need to be updated to reflect the revised numbering of Section 5.6. As a result of this comment, the references to the PAM Report in LCO 3.3.3, Required Actions B.1 and G.1 have been changed from Specification 5.6.8 to Specification 5.6.6.

2. Per Errata #40, CTS 15.3.5, Table 15.3.5-5 has been amended since the original ITS submittal. The ITS submittal should be updated to reflect the current Technical Specifications. The ITS submittal has been revised to reflect amendment 192/197 to the current technical specifications.

3. Per Errata #117, ITS Table 3.3.3-1, Function 14, Hydrogen Monitors, should require performance of SR 3.3.3.3, Channel Calibration, for the electronic portion of the Hydrogen Monitors, consistent with the requirements of CTS Table 15.4.1-1, Function 26. As a result of this comment, ITS LCO 3.3.3, Surveillance Requirements Note was revised to require the performance of SR 3.3.3.3 for Table 3.3.3-1, Function 14.

4. Per Errata #127, ITS LCO 3.3.3, Table 3.3.3-1, Function 14, does not capture the intent of the CTS by not requiring two Hydrogen monitors with independent power supplies. This requirement is implied in Note *, which modifies CTS 15.3.5, Table 15.3.5-5, Function 10. Note * requires, "With only one hydrogen monitor operable, restore an inoperable monitor with an independent power supply to an operable status within 30 days or be in hot shutdown within 6 hours." As a result of this comment, a Note has been added to ITS LCO 3.3.3, Table 3.3.3-1, Function 14, whereby the 2 required hydrogen monitors shall be powered from independent power supplies.

5. The STS Bases markup of SR 3.3.3.3 indicates the addition of text, consistent with approved TSTF-19. However, this text did not appear in the ITS SR 3.3.3.3 Bases. Therefore, the text approved by TSTF-19 has been added to the ITS SR 3.3.3 Bases.

3.3.5-01 DOC L.1
ITS 3.3.4 Action A
CTS 15.3.5, Table 13.3.5-3, Function 4.a.i, 4.a.ii, 4.b.i, Footnote **

The CTS allows continued operation with one channel inoperable if the affected channel is placed in trip within one hour. The ITS actions adopt the STS requirement to place the channel in trip within 6 hours. Comment: The extended Completion Time is justified in DOC L.2 based upon the analysis contained in WCAP-10271-P-A, Supplement 2. This is consistent with the basis for the STS. The Safety Evaluation Reports for WCAP-10271 require that applicants for the proposed Technical Specification changes for individual plants must confirm the applicability of the generic analysis of the WCAP. The applicability of the WCAP-10271 analysis to Point Beach has not been discussed. Adopting the WCAP as the basis for Completion Times is a technical change that should be the subject of a separate technical evaluation.

Response:

The Completion Time of Required Action A.1 has been changed to one hour, consistent with the CTS requirement. Justification for this change is provided in JFD 10.

3.3.5-02 DOC L.2
ITS 3.3.4, Action A, Note
CTS 15.3.5, Table 13.3.5-3, Function 4.a.i, 4.a.ii, 4.b.i, Footnote ##

The CTS does not allow taking an inoperable channel out of the tripped condition to allow surveillance testing of other channels. The ITS adopts the STS provision that allows bypass of an inoperable channel for up to 4 hours for surveillance testing. Comment: The provision to allow taking the inoperable channel out of the tripped condition is justified in DOC L.2 based upon the analysis contained in WCAP-10271-P-A, Supplement 2. This is consistent with the basis for the STS. The Safety Evaluation Reports for WCAP-10271 require that applicants for the proposed Technical Specification changes for individual plants must confirm the applicability of the generic analysis of the WCAP. The applicability of the WCAP-10271 analysis to Point Beach has not been discussed. This is a technical change that should be the subject of a separate technical evaluation. Delete the note allowing removal of inoperable channels from the tripped condition.

Response:

The Note modifying STS LCO 3.3.5, Condition A has not been retained in ITS. Justification for this change is presented in JFD 11.

3.3.5-03 DOC A.3
ITS 3.3.4, Surveillance Requirements
CTS 15.5.1, Table 15.5.1-1, Plant Conditions When Required

The CTS requires surveillance under all plant conditions. The ITS adopts the STS philosophy of requiring surveillance only in the specified Applicable Modes for each function. Comment: These changes are classified as administrative, however, based upon a literal reading of the CTS they are indeed less restrictive. Reclassify the change.

Response:

Although CTS Table 15.4.1-1 states for many of the functions that the surveillance's are required in "ALL" plant conditions, CTS 15.4.0.1 states, "Surveillance requirements shall be met during all times that the system or component is required to be operable." Additionally, the CTS defines Operability as when a system, subsystem, train, component, or device is capable of performing its functions as analyzed in the safety analysis report. Therefore, adopting the STS philosophy requiring surveillance only when the respective Function is required to be operable, is not a less restrictive change. Point Beach interpretation of the CTS does not require surveillance's on functions when they are not required to be operable in accordance with the assumptions made in the safety analysis.

3.3.5-04 No DOC
ITS 3.3.4, SR 3.3.4.3
CTS 15.5.1, Table 15.5.1-1, Function 9, 10, Setting Limit

The trip settings (LSSS) in the CTS appear to be expressed at trip setpoints (see CTS bases). The ITS proposes to use Allowable Values instead. Furthermore, the STS format presumes the existence of a plant specific setpoint analysis that sets the context for the form (i.e., allowable values, trip setpoints, or both) in which the LSSS are expressed in the ITS. In the absence of this analysis the expression of the LSSS in the ITS cannot be unambiguously used to determine instrument operability from measurements of component errors. The Point Beach Allowable Values do not appear to be derived from such an analysis as reference to setpoint analysis was deleted from the Bases, and numerical Allowable Values are not provided in the ITS for certain trip functions. Comment: This change is not discussed in a DOC and the plant-specific values do not appear to have been derived using a formal setpoint methodology. Provide justification for using Allowable Values instead of Trip Setpoints. Ensure that the values used are those that were calculated by the plant-specific setpoint analysis. Include a reference to the setpoint analysis in the Bases.

Response:

Per PBNP DG-I01, Instrument Setpoint Methodology, the Settings Limits specified in the CTS are equivalent to Allowable Values.

3.3.7-01 No DOC
ITS 3.3.5, Surveillance Requirements
CTS 15.5.1, Table 15.5.1-1, Plant Conditions When Required

The CTS requires surveillance under all plant conditions. The ITS adopts the STS philosophy of requiring surveillance only in the specified Applicable Modes for each function. Comment: These changes are classified as administrative, however, based upon a literal reading of the CTS they are indeed less restrictive. Reclassify the change.

Response:

Although CTS Table 15.4.1-1 states for many of the functions that the surveillance's are required in "ALL" plant conditions, CTS 15.4.0.1 states, "Surveillance requirements shall be met during all times that the system or component is required to be operable." Additionally, the CTS defines Operability as when a system, subsystem, train, component, or device is capable of performing its functions as analyzed in the safety analysis report. Therefore, adopting the STS philosophy requiring surveillance only when the respective Function is required to be operable, is not a less restrictive change. Point Beach interpretation of the CTS does not require surveillance's on functions when they are not required to be operable in accordance with the assumptions made in the safety analysis.

3.3.7-02 DOC M.1
ITS 3.3.5, Table 3.3.5-1, Trip Setpoint

No trip settings for the CREFS functions are given in the CTS. The ITS proposes to follow the STS approach of providing Trip Setpoints for these functions. For all other LCOs the ITS proposes to use Allowable Values. Additionally, the STS format presumes the existence of a plant specific setpoint analysis that sets the context for the form (i.e., allowable values, trip setpoints, or both) in which the trip settings are expressed in the ITS. In the absence of this analysis the expression of the settings in the ITS cannot be unambiguously used to determine instrument operability from measurements of component errors. The Point Beach Trip Setpoints do not appear to be derived from such an analysis as reference to setpoint analysis was deleted from the Bases. Comment: This change is not discussed in the DOC and the plant-specific values do not appear to have been derived using a formal setpoint methodology. Provide consistent expression of instrumentation trip settings within the ITS and provide justification for whichever form of expression is used (Allowable Values or Trip Setpoints). Ensure that the values used are those that were calculated by the plant-specific setpoint analysis. Include a reference to the setpoint analysis in the Bases.

Response:

Automatic initiation of CREFS is not credited in the safety analysis for the mitigation of an accident. Therefore, a field setting for the Control Room Area Monitors and Control Room Air

Intake Functions have been included in ITS Table 3.3.5-1. These field settings were developed outside the scope of the setpoint methodology and do not imply that analytical limits exist, or that these functions are necessary to mitigate an analyzed accident.

The following information is provided in response to the Nuclear Regulatory Commission staff's followup requests for additional information on previous questions, as discussed during a meeting between NRC and plant staff on February 15, 2001.

NRC Question 1.0-2:

1.0-2 JFD 8, DOC A7
CTS, ITS, and STS definitions of Shutdown Margin

The ITS proposes to explicitly exclude accounting for the highest worth RCCA being fully withdrawn from the core in the case where all the RCCAs, including any that cannot be moved, are fully inserted. The reason is that the CTS doesn't require this, and it would be overly conservative. Actually, the CTS is silent about this situation, and thus is ambiguous. The STS would require this assumption in this situation. Deviating from the STS definition as proposed would be generic because the basis for it is not tied to the plant design. In addition, staff considers this CTS change involving a deviation from the STS to be beyond scope. It is thus assigned as beyond scope item 98. **Comment:** Adopt the wording of the STS shutdown margin definition.

Response:

The wording of the STS shutdown margin definition has been adopted as per TSTF-248. JFD 8 has been revised accordingly.

NRC Question 3.4.13-1:

ITS 3.4.13 RCS Operational Leakage
ITS 3.4.13 Require Action A.1 Completion Time
STS 3.4.13 Require Action A.1 Completion Time
DOC A.2 and JFD-3

The CTS provides 4 hours to conduct an evaluation of the leakage, and to commence a shutdown no later than 24 hours. The STS provides 4 hours to reduce the leakage in Required Action A, and to shutdown in 6 hours per Condition B.

Comment: Adopt the STS time to reduce leakage; Require Action A.1 Completion Time of 4 hours. The CTS time of 24 hours is to commence a shutdown, and not time to reduce leakage.

Response:

The STS time to reduce leakage has been adopted. DOCs A.2 and M.2 have been revised accordingly and JFD 3 has been marked as not used.

Additional Corrections Required to ITS 3.3.1:

1. Per Errata #159, the Bases description of Allowable Values does not include a discussion on how they are derived, i.e., Setpoint Methodology. As a result on this comment, the STS description of the Allowable Values has been included in the ITS Bases.

2. DOC M.21 incorrectly refers to Condition K, instead of Condition N. As a result of this comment, DOC M.21 has been revised to correctly refer to Condition N.

3. The Insert for Condition N is missing from the NUREG-1431 markup in Supplement 9 to the ITS Conversion. As a result of this comment, the Condition N Insert for the NUREG-1431 markup has been included in this submittal for completeness of the ITS conversion.

4. DOC LA.1 does not adequately describe where the details of CTS Table 15.3.5-2 will be relocated. As a result of this comment, DOC LA.1 has been revised to reflect the relocation of details from CTS Table 15.3.5-2 to the FSAR.

5. DOC L.9 does not provide adequate justification for the reduction in testing frequency for the Source and Intermediate Range Neutron Flux Monitors. As a result of this comment, DOC L.9 has been revised to reflect the operating experience and instrument reliability associated with these function, which demonstrates that a decrease in the performance of a COT on the Source and Intermediate Range Neutron Flux Monitors will not result in a decrease in the reliability of these instruments.

6. As a followup question to RAI 3.3.1-4, DOC A.31 should more clearly state why the CTS requirement of $\geq 9\%$ ($\pm 1\%$) is equivalent to the ITS requirement of $\geq 10\%$ for when the low pressurizer pressure, high pressurizer water level, and low reactor coolant flow (two loops) reactor trips shall be unblocked. As a result of this comment, DOC A.31 has been revised to clarify why $\geq 9\%$ ($\pm 1\%$) is equivalent to $\geq 10\%$.

7. As a followup to Errata #101, the Bases discussion of ITS SR 3.3.1.13 needs to more clearly delineate which trips are associated with each trip breaker. As a result of this comment, the Bases discussion of ITS SR 3.3.1.13 has been revised to clarify that the reactor trip breakers have undervoltage and shunt trips, but the reactor trip bypass breakers only have undervoltage trips associated with them.

ATTACHMENT 2
DISCARD AND INSERTION INSTRUCTIONS

VOLUME 1	
SECTION 1.0	
DISCARD	**INSERT**
JFD page 2 of 2	JFD page 2 of 2
ISTS markup page 1.1-6	ISTS markup page 1.1-6
ITS page 1.1-5	ITS page 1.1-5
VOLUME 3	
SECTION 3.3.1	
DOC pages 14, 17, 22 and 31 of 41	DOC pages 14, 17, 22 and 31 of 41
ISTS Bases markup pages B 3.3.1-4, B 3.3.1-5 and B 3.3.1-58	ISTS Bases markup pages B 3.3.1-4, B 3.3.1-5 and B 3.3.1-58
ITS Base pages B 3.3.1-3 through B 3.3.1-6 and B 3.3.1-42	ITS Base pages B 3.3.1-3 through B 3.3.1-6 and B 3.3.1-42
VOLUME 4	
SECTION 3.3.2	
DISCARD	**INSERT**
DOC pages 4 through 18 of 18	DOC pages 4 through 18 of 18
CTS markup pages 1, 7 through 13, 20 and 23 of 23	CTS markup pages 1, 7 through 13, 20 and 23 of 23
JFD pages 1 through 25 of 25	JFD pages 1 through 25 of 25
ISTS markup pages 3.3-23 through 3.3-27 and 3.3-32 through 3.3-39	ISTS markup pages 3.3-23 through 3.3-27, 3.3-32 through 3.3-39 and ISTS markup Insert
ISTS Bases markup pages B 3.3.2-63, B 3.3.2-64, B 3.3.2-66, B 3.3.2-68, B 3.3.2-81, B 3.3.2-84, B 3.3.2-88, B 3.3.2-90, B 3.3.2-92, B 3.3.2-95, B 3.3.2-96, B 3.3.2-105 through B 3.3.2-112, B 3.3.2-117, B 3.3.2-118, and B 3.3.2-120	ISTS Bases markup pages B 3.3.2-63, B 3.3.2-64, B 3.3.2-66, B 3.3.2-68, B 3.3.2-81, B 3.3.2-84, B 3.3.2-88, B 3.3.2-90, B 3.3.2-92, B 3.3.2-95, B 3.3.2-96, B 3.3.2-105 through B 3.3.2-112, B 3.3.2-117, B 3.3.2-118, and B 3.3.2-120 and ISTS Bases markup Insert
NSHC pages 1 through 7 of 7	NSHC pages 1 through 8 of 8
ITS pages 3.3.2-1 through 3.3.2-9	ITS pages 3.3.2-1 through 3.3.2-7

ATTACHMENT 2
DISCARD AND INSERTION INSTRUCTIONS

SECTION 3.3.2 (continued)	
DISCARD	**INSERT**
ITS Bases pages B 3.3.2-1 through B 3.3.2-34	ITS Bases pages B 3.3.2-1 through B 3.3.2-28
SECTION 3.3.3	
DISCARD	**INSERT**
DOC pages 1 through 19 of 19	DOC pages 1 through 18 of 18
CTS markup pages 2 through 6 of 14	CTS markup pages 2 through 6 of 14
JFD pages 1 through 8 of 8	JFD pages 1 through 9 of 9
ISTS markup pages 3.3-40 through 3.3-43	ISTS markup pages 3.3-40 through 3.3-43
ISTS Bases pages B 3.3.3-129, B 3.3.3-134 through B 3.3.3-137	ISTS Bases pages B 3.3.3-129, B 3.3.3-134 through B 3.3.3-137
NSHC pages 1 through 12 of 12	NSHC pages 1 through 11 of 11
ITS pages 3.3.3-1 through 3.3.3-4	ITS pages 3.3.3-1 through 3.3.3-4
ITS Bases pages B 3.3.3-1 through B 3.3.3-16	ITS Bases pages B 3.3.3-1 through B 3.3.3-14
SECTION 3.3.5	
DISCARD	**INSERT**
DOC pages 1 through 5 of 5	DOC pages 1 through 4 of 4
CTS markup pages 3 of 5 and 4 of 5	CTS markup pages 3 of 5 and 4 of 5
JFD page 4 of 4	JFD page 4 of 4
ISTS markup page 3.3-47	ISTS markup page 3.3-47
ISTS Bases markup pages B 3.3.5-3 and B 3.3.5-4	ISTS Bases markup pages B 3.3.5-3 and B 3.3.5-4
NSHC pages 1 through 6 of 6	NSHC pages 1 through 4 of 4
ITS pages 3.3.4-1 through 3.3.4-3	ITS pages 3.3.4-1 through 3.3.4-3
ITS Bases pages B 3.3.4-1 through B 3.3.4-7	ITS Bases pages B 3.3.4-1 through B 3.3.4-6

ATTACHMENT 2
DISCARD AND INSERTION INSTRUCTIONS

SECTION 3.3.7	
DISCARD	**INSERT**
CTS markup page 6 of 6	CTS markup page 6 of 6
JFD pages 1 through 7 of 7	JFD pages 1 through 6 of 6
ISTS markup page 3.3-59	ISTS markup page 3.3-59
ISTS Bases markup page B 3.3.7-3 and Insert B 3.3.5-3	ISTS Bases markup page B 3.3.7-3 and Insert B 3.3.5-3
ITS page 3.3.5-3	ITS page 3.3.5-3
ITS Bases pages B 3.3.5-1 through B 3.3.5-5	ITS Bases pages B 3.3.5-1 through B 3.3.5-4
VOLUME 5	
SECTION 3.4.13	
DISCARD	**INSERT**
DOC pages 1 through 5 of 6	DOC pages 1 through 5 of 6
JFD page 1 of 1	JFD page 1 of 1
ISTS markup page 3.4-33	ISTS markup page 3.4-33
ISTS Bases page B 3.4.13-4	ISTS Bases page B 3.4.13-4
ITS page 3.4.13-1	ITS page 3.4.13-1
ITS Bases pages B 3.4.13-1 through B 3.4.13-5	ITS Bases pages B 3.4.13-1 through B 3.4.13-5

ENCLOSURE

ENCLOSURE

Description of Changes - NUREG-1431 Section 3.03.02

15-Mar-01

DOC Number	DOC Text

A.05
Rev. A

CTS Table 15.3.5-3 and Table 15.3.5-4, "Permissible Bypass Conditions" columns are changed to "Applicable MODES" column in ITS Table 3.3.2-1. Table 15.3.5-3 and Table 15.3.5-4 provided a listing of conditions where each trip function was allowed to be bypassed. The ITS "Applicable MODES" column specifies the MODES in which the instruments are required OPERABLE. The MODES specified for each function are based on the safety analyses assumptions made for that function, or the diverse protection that function provides. Also, the entries in the "Plant Conditions When Required" column of CTS Table 15.4.1-1, items 7, 8, 11 and 27 have been changed from "ALL" to the specific MODES under which each function is required to be OPERABLE. This change represents an administrative change to improve clarity.

CTS:	ITS:
15.03.05 T 15.03.05-03	LCO 3.03.02 T3.03.02-01
15.03.05 T 15.03.05-03 01.A	LCO 3.03.02 T3.03.02-01 01A
15.03.05 T 15.03.05-03 01.B	LCO 3.03.02 T3.03.02-01 01C
	LCO 3.03.02 T3.03.02-01 01C
15.03.05 T 15.03.05-03 01.D	LCO 3.03.02 T3.03.02-01 01D
	LCO 3.03.02 T3.03.02-01 01D
	LCO 3.03.02 T3.03.02-01 NOTE (a)
15.03.05 T 15.03.05-03 02.A	LCO 3.03.02 T3.03.02-01 02A
15.03.05 T 15.03.05-03 02.B	LCO 3.03.02 T3.03.02-01 02C
	LCO 3.03.02 T3.03.02-01 02C
15.03.05 T 15.03.05-03 03.A.I	LCO 3.03.02 T3.03.02-01 06B
15.03.05 T 15.03.05-03 03.B.I	LCO 3.03.02 T3.03.02-01 06D
15.03.05 T 15.03.05-03 03.B.II	LCO 3.03.02 T3.03.02-01 06B
15.03.05 T 15.03.05-04 01.B	LCO 3.03.02 T3.03.02-01 03A
15.03.05 T 15.03.05-04 02.A (1)	LCO 3.03.02 T3.03.02-01 04E-01
15.03.05 T 15.03.05-04 02.B (1)	LCO 3.03.02 T3.03.02-01 04D-01
15.03.05 T 15.03.05-04 02.B (2)	LCO 3.03.02 T3.03.02-01 04D-03
15.03.05 T 15.03.05-04 02.C	LCO 3.03.02 T3.03.02-01 04C
	LCO 3.03.02 T3.03.02-01 04C
15.03.05 T 15.03.05-04 02.D	LCO 3.03.02 T3.03.02-01 04A
15.03.05 T 15.03.05-04 03.A	LCO 3.03.02 T3.03.02-01 05B
	LCO 3.03.02 T3.03.02-01 05B
15.04.01 T 15.04.01-01 07	LCO 3.03.02 T3.03.02-01 01D
15.04.01 T 15.04.01-01 08	LCO 3.03.02 T3.03.02-01 05B
	LCO 3.03.02 T3.03.02-01 06B
15.04.01 T 15.04.01-01 11.A	LCO 3.03.02 T3.03.02-01 06D
15.04.01 T 15.04.01-01 27	LCO 3.03.02 T3.03.02-01 01B
	LCO 3.03.02 T3.03.02-01 02B

DOC Number	DOC Text	
	15.04.01 T 15.04.01-01 27	LCO 3.03.02 T3.03.02-01 02C
A.06 Rev. E	Not used.	
	CTS:	**ITS:**
	N/A	N/A
A.07 Rev. A	CTS 15.3.5, Table 15.3.5-3, item 3.a.ii, and Table 15.3.5-4, items 1.a, 2.a, 2.b, and 3.b are provided as references that any automatic Safety Injection results in an actuation of the AFW, Containment Isolation, Steam Line Isolation coincident with Hi Hi Steam Flow, Steam Line Isolation coincident with Hi Steam Flow and Low Tavg, and Feedwater Isolation, respectively. Based on these items being a direct output of the Safety Injection logic (no separate logic system), any Operator Actions are directly addressed by the Safety Injection function. Details on system function and interrelationships are addressed in the Bases of the ITS. Deletion of the Operator Actions for the Safety Injection input to each of these CTS items is administrative.	
	CTS:	**ITS:**
	15.03.05 T 15.03.05-03 03.A.II	N/A
	15.03.05 T 15.03.05-04 01.A	N/A
	15.03.05 T 15.03.05-04 02.A (2)	N/A
	15.03.05 T 15.03.05-04 02.B (3)	N/A
	15.03.05 T 15.03.05-04 03.B	N/A
A.08 Rev. A	CTS Table 15.4.1-1, Note (1) has been deleted. Note (1) establishes that during periods of refueling shutdown, various surveillances are not required to be performed, but must be performed prior to criticality, if not performed during the previous surveillance period. This Note is no longer required with the adoption of ITS SR 3.0.1 and SR 3.0.4. SR 3.0.1 states surveillance requirements shall be met during the MODES in the applicability for individual LCOs. SR 3.0.4 states entry into a MODE in the applicability of an LCO shall not be made unless the LCO's surveillances have been met within their specified Frequency. Therefore the concept of CTS Table 15.4.1-1, Note (1) has been retained in ITS and its deletion is administrative.	
	CTS:	**ITS:**
	15.04.01 T 15.04.01-01 07 (1)	N/A
	15.04.01 T 15.04.01-01 08 (1)	N/A
	15.04.01 T 15.04.01-01 10 (1)	N/A
	15.04.01 T 15.04.01-01 11.A (1)	N/A
	15.04.01 T 15.04.01-01 27 (1)	N/A
	15.04.01 T 15.04.01-01 44 (1)	N/A

Description of Changes - NUREG-1431 Section 3.03.02

15-Mar-01

DOC Number	DOC Text

A.09
Rev. A

CTS 15.4.1, Table 15.4.1-1, item 17, Feedwater Isolation on SI, requires a TEST of the MFP Trip and MFRV shutting on SI, each refueling interval. These functions are a direct output of the SI logic. Therefore no additional testing is required to ensure their OPERABILITY. The surveillance requirements performed on the SI logic verifies the outputs to these functions are OPERABLE. Details on system function and interrelationships are addressed in the Bases of the ITS. Therefore the surveillance requirements listed for CTS Table 15.4.1-1, item 17 are replaced with the statement, "Refer to Table 3.3.1-1, Function1 (Safety Injection) for all initiation functions and requirements."

CTS:	ITS:
15.04.01 T 15.04.01-01 17.A	N/A
15.04.01 T 15.04.01-01 17.B	N/A

A.10
Rev. A

CTS Table 15.4.1-1, item 44, Plant Condition Required column, states verification of the ESFAS logic is required in all plant conditions. However, the MODE of Applicability for the ESFAS logic is dependent on the requirements of each function it supports. The MODE of Applicability for each supported function is based on the safety analysis assumptions for that function. CTS 15.4.0.1 states the surveillance requirements shall be met when the system or component is required to be OPERABLE. Therefore CTS Table 15.4.1-1, item 44 is required to be met consistent with the MODE of Applicability of each supported function and deletion of the required plant condition associated with item 44 is administrative.

CTS:	ITS:
15.04.01 T 15.04.01-01 44	SR 3.03.02.02

A.11
Rev. A

CTS Table 15.4.1-1, Notations for Plant Conditions, have been deleted. The Applicability requirements for each function is provided in ITS using the NUREG-1431 concept of MODES, as defined in ITS Table 1.1-1. Therefore the terms used in CTS Table 15.4.1-1 are no longer necessary, and are administratively removed.

CTS:	ITS:
15.04.01 T 15.04.01-01 ALL	N/A
15.04.01 T 15.04.01-01 COLD S/D	N/A
15.04.01 T 15.04.01-01 HOT S/D	N/A
15.04.01 T 15.04.01-01 PWR - POWER OPER	N/A
15.04.01 T 15.04.01-01 REF S/D	N/A

Description of Changes - NUREG-1431 Section 3.03.02

15-Mar-01

DOC Number	DOC Text	
A.12 Rev. E	CTS 15.3.5 has been modified by the adoption of a Note allowing separate Condition entry for each Function. This Note is necessary because of the adoption of ITS Specification 1.3, which states, "Once a Condition as been entered, subsequent trains, subsystem, components, or variables expressed in the Condition discovered to be inoperable or not within limits, will not result in separate entry into the Condition, unless specifically stated." This restriction on Condition entry does not exist in the CTS, therefore, it is necessary to adopt the Note allowing separate Condition entry for each Function.	
	CTS:	**ITS:**
	NEW	LCO 3.03.02 COND NOTE
L.01 Rev. E	Not used.	
	CTS:	**ITS:**
	N/A	N/A
L.02 Rev. E	Not used.	
	CTS:	**ITS:**
	N/A	N/A
L.03 Rev. A	The Applicabilities associated with CTS 15.3.5, Table 15.3.5-3, item 1.c, and CTS 15.4.1, Table 15.4.1-1, item 10, have been modified to provide an exception that allows RCS hydrostatic testing in MODE 3 without the Steam Line Pressure - Low Safety Injection Function OPERABLE. In this situation, all control rods are inserted and the MSIVs are closed. The Safety Injection actuation signal that would be generated with Pressurizer Pressure > 1800 psig, would not be indicative of a SLB or Feed Line Break. Therefore, the Steam Line Pressure-Low SI Function is not required to be OPERABLE to mitigate an analyzed transient in this condition.	
	CTS:	**ITS:**
	15.03.05 T 15.03.05-03 01.C	LCO 3.03.02 T3.03.02-01 01E
	15.04.01 T 15.04.01-01 10	LCO 3.03.02 T3.03.02-01 01E
	NEW	LCO 3.03.02 T3.03.02-01 NOTE (b)

Description of Changes - NUREG-1431 Section 3.03.02

15-Mar-01

DOC Number	DOC Text

L.04
Rev. A

CTS Table 15.4.1-1, surveillance frequency S, "each shift", is proposed to become "every 12 hours", in ITS. The nominal Point Beach shift duration is 8 hours. Therefore this change extends the nominal time between performances of these surveillances by 4 hours, resulting in a relaxation of the current requirement. This is acceptable based on other less formal, but more frequent, checks of channels during normal operational use of the displays associated with the LCO required channels, and the low probability of equipment malfunction during the additional (nominal 4 hour) time interval.

CTS:	ITS:
15.04.01 T 15.04.01-01 07	SR 3.03.02.01
15.04.01 T 15.04.01-01 08	SR 3.03.02.01
15.04.01 T 15.04.01-01 10	SR 3.03.02.01
15.04.01 T 15.04.01-01 27	SR 3.03.02.01

DOC Number	DOC Text

L.05
Rev. E

CTS Table 15.3.5-3 has been modified by the addition of items 1.e, 2.c, 3.a.iii and 3.b.iii. CTS Table 15.3.5-4 has been modified by the addition of items 1.c, 2.e and 3.c. These items provide the Limiting Conditions for Operation for the Automatic Actuation Logic and Actuation Relays associated with Safety Injection, Containment Spray, AFW, Containment Isolation, Steam Line Isolation and Feedwater Isolation. The actuation logic consists of all circuitry housed within the actuation subsystems, including the initiating relay contacts responsible for actuating the ESF equipment. CTS Table 15.4.1-1, item 44, provides surveillance requirements for the ESF Actuation Logic, thereby establishing the requirement for their operability. Adding these items to CTS Tables 15.3.5-3 and 15.3.5.4 clarifies the MODES under which the actuation logic is required to be OPERABLE and provides Required Actions to take if the required trains of actuation logic are not operable.

Under CTS, if a train of Automtic Actuation Logic is inoperable, LCO 15.3.0.b would be entered, requiring action be initiated within 1 hour to place the plant in a condition whereby the specification does not apply. ITS will require an inoperable train to be restored to operable status within 6 hours. If the train cannot be restored to OPERABLE status, the unit must be placed in a MODE in which the LCO does not apply. This is done by placing the unit in MODE 3 within 12 hours and in MODE 4 within 18 hours (Condition G) or MODE 5 within 42 hours (Condition C). Adopting the Required Actions of the STS is less restictive, but is acceptable. The Completion Time to restore an inoperable train to OPERABLE status is reasonable considering that there is another train OPERABLE, and the low probability of an event occurring during this interval. The Completion Times to place the unit in a condition where the LCO no longer applies are reasonable, based on operating experience, to reach the required unit conditions from full power in an orderly manner and without challenging unit systems.

CTS:	ITS:
NEW	LCO 3.03.02 COND C
	LCO 3.03.02 COND C RA C.1
	LCO 3.03.02 COND C RA C.2.1
	LCO 3.03.02 COND C RA C.2.2
	LCO 3.03.02 COND G
	LCO 3.03.02 COND G RA G.1
	LCO 3.03.02 COND G RA G.2.1
	LCO 3.03.02 COND G RA G.2.2
	LCO 3.03.02 T3.03.02-01 01B
	LCO 3.03.02 T3.03.02-01 02B
	LCO 3.03.02 T3.03.02-01 03B
	LCO 3.03.02 T3.03.02-01 04B
	LCO 3.03.02 T3.03.02-01 05A
	LCO 3.03.02 T3.03.02-01 06A

Description of Changes - NUREG-1431 Section 3.03.02

15-Mar-01

DOC Number	DOC Text

L.06
Rev. E

CTS 15.4.1, Table 15.4.1-1, item 27, Containment Pressure, quarterly TEST requirement is modified by Note (9), which states, "Test of Narrow Range Pressure, 3.0 psig, -3.0 psig excluded." This information is not retained in ITS. This information provides details that are not directly pertinent to the actual requirements, but rather describe instrumentation which is not included in the requirement. These details are not necessary to adequately describe the regulatory requirement. Accordingly, these details may be deleted from the Technical Specifications as they are not required to provide adequate protection of public health and safety.

CTS:	ITS:
15.04.01 T 15.04.01-01 27 (9)	N/A

LA.01
Rev. A

CTS Table 15.3.5-3 and Table 15.3.5-4, "Total No. of Channels" column and the "No. of Channels to Trip" column are deleted. This information provides details of design or process which are not directly pertinent to the actual requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to license controlled documents without an impact on safety.

CTS:	ITS:
15.03.05 T 15.03.05-03	N/A
15.03.05 T 15.03.05-03 01.A	LCO 3.03.02 T3.03.02-01 01A
15.03.05 T 15.03.05-03 01.B	LCO 3.03.02 T3.03.02-01 01C
15.03.05 T 15.03.05-03 01.C	LCO 3.03.02 T3.03.02-01 01E
15.03.05 T 15.03.05-03 01.D	LCO 3.03.02 T3.03.02-01 01D
15.03.05 T 15.03.05-03 02.A	LCO 3.03.02 T3.03.02-01 02A
15.03.05 T 15.03.05-03 02.B	LCO 3.03.02 T3.03.02-01 02C
15.03.05 T 15.03.05-03 03.A.I	LCO 3.03.02 T3.03.02-01 06B
15.03.05 T 15.03.05-03 03.B.I	LCO 3.03.02 T3.03.02-01 06D
15.03.05 T 15.03.05-03 03.B.II	LCO 3.03.02 T3.03.02-01 06B
15.03.05 T 15.03.05-04 01.B	LCO 3.03.02 T3.03.02-01 03A
15.03.05 T 15.03.05-04 02.A (1)	LCO 3.03.02 T3.03.02-01 04E-01
15.03.05 T 15.03.05-04 02.B (1)	LCO 3.03.02 T3.03.02-01 04D-01
15.03.05 T 15.03.05-04 02.B (2)	LCO 3.03.02 T3.03.02-01 04D-03
15.03.05 T 15.03.05-04 02.C	LCO 3.03.02 T3.03.02-01 04C
15.03.05 T 15.03.05-04 02.D	LCO 3.03.02 T3.03.02-01 04A
15.03.05 T 15.03.05-04 03.A	LCO 3.03.02 T3.03.02-01 05B

Description of Changes - NUREG-1431 Section 3.03.02

15-Mar-01

DOC Number	DOC Text

LA.02
Rev. A

CTS 15.3.5 Table 15.3.5-3, item 2.a, Containment Spray - Manual, is modified by Note ****, which states, "Both switches must be activated simultaneously." This information is not retained in ITS, but is moved to a licensee controlled document. This information provides details of design which are not directly pertinent to the actual requirement, i.e., LCO or Surveillance Requirement, but rather describes the method by which the function is actuated. Since these details are not necessary to adequately describe the regulatory requirement, they can be moved to other documents without impact on safety. Changes to plant procedures and other plant controlled documents are subject to controls imposed by plant administrative procedures, which endorse applicable regulations and standards.

CTS:	ITS:
15.03.05 T 15.03.05-03 02.A****	N/A

LA.03
Rev. E

Not used.

CTS:	ITS:
N/A	N/A

M.01
Rev. E

The Operator Actions of CTS Table 15.3.5-3, item 2.a, Containment Spray - Manual, have been revised. Currently, if the Conditions of Column 3 cannot be met, operators are required to place the unit in hot shutdown in 8 hours and in cold shutdown in 48 hours. Proposed ITS LCO 3.3.2, Condition E is entered if one or both channels are inoperable. The associated Required Actions require restoration of the required channel(s) to OPERABLE status within 1 hour or be in MODE 3 in 7 hours and in MODE 5 in 37 hours. This results in additional restrictions on unit operation, but is a reasonable amount of time, based on operating experience to place the unit in the required conditions from full power in an orderly manner and without challenging unit systems.

CTS:	ITS:
15.03.05 T 15.03.05-03 02.A	LCO 3.03.02 COND E LCO 3.03.02 COND E RA E.1 LCO 3.03.02 COND E RA E.2.1
15.03.05 T 15.03.05-03 02.A*	LCO 3.03.02 COND E RA E.2.2

Description of Changes - NUREG-1431 Section 3.03.02

15-Mar-01

DOC Number	DOC Text

M.02
Rev. E

The Operator Actions of CTS Table 15.3.5-3, item 1.b, 1.c, 1.d, 2.b, 3.a.i, 3.b.ii, and Table 15.3.5-4, items 2.b, 2.c, 3.a require the unit be placed in the tripped condition or be in hot shutdown in 8 hours and in cold shutdown in 48 hours, if the Conditions of Column 3, Minimum Operable Channels, cannot be met. Proposed ITS LCO 3.3.2, Condition D is entered if one or more channels associated with ITS Table 3.3.2-1, items 1.c, 1.d, 1.e, 2.c, 4.c, 4.d, 5.b, 6.b or 7.a are inoperable. Condition D Required Actions require an inoperable channel be placed in the tripped condition in 1 hour, or be in MODE 3 in the 7 hours and in MODE 4 in 13 hours. This results in placing the unit in a MODE where the function is no longer required. This is more restrictive than the current requirement. Although CTS requires the unit be placed in cold shutdown in 48 hours, when the unit has been shutdown and Tavg is reduced to below 350 F, the actions can be discontinued per CTS 15.3.0.c. Therefore, the CTS allows additional time to reach MODE 4.

CTS:	ITS:
15.03.05 T 15.03.05-03 01.B	LCO 3.03.02 COND D LCO 3.03.02 COND D RA D.1 LCO 3.03.02 COND D RA D.2.1 LCO 3.03.02 COND D RA D.2.2
15.03.05 T 15.03.05-03 01.C	LCO 3.03.02 COND D LCO 3.03.02 COND D RA D.1 LCO 3.03.02 COND D RA D.2.1 LCO 3.03.02 COND D RA D.2.2
15.03.05 T 15.03.05-03 01.D	LCO 3.03.02 COND D LCO 3.03.02 COND D RA D.1 LCO 3.03.02 COND D RA D.2.1 LCO 3.03.02 COND D RA D.2.2
15.03.05 T 15.03.05-03 02.B	LCO 3.03.02 COND D LCO 3.03.02 COND D RA D.1 LCO 3.03.02 COND D RA D.2.1 LCO 3.03.02 COND D RA D.2.2
15.03.05 T 15.03.05-03 03.A.I	LCO 3.03.02 COND D LCO 3.03.02 COND D RA D.1 LCO 3.03.02 COND D RA D.2.1 LCO 3.03.02 COND D RA D.2.2
15.03.05 T 15.03.05-03 03.B.II	LCO 3.03.02 COND D LCO 3.03.02 COND D RA D.1 LCO 3.03.02 COND D RA D.2.1 LCO 3.03.02 COND D RA D.2.2
15.03.05 T 15.03.05-04 02.B (2)	LCO 3.03.02 COND D LCO 3.03.02 COND D RA D.1 LCO 3.03.02 COND D RA D.2.1

Description of Changes - NUREG-1431 Section 3.03.02

15-Mar-01

DOC Number	DOC Text	
	15.03.05 T 15.03.05-04 02.B (2)	LCO 3.03.02 COND D RA D.2.2
	15.03.05 T 15.03.05-04 02.C	LCO 3.03.02 COND D
		LCO 3.03.02 COND D RA D.1
		LCO 3.03.02 COND D RA D.2.1
		LCO 3.03.02 COND D RA D.2.2
	15.03.05 T 15.03.05-04 03.A	LCO 3.03.02 COND D
		LCO 3.03.02 COND D RA D.1
		LCO 3.03.02 COND D RA D.2.1
		LCO 3.03.02 COND D RA D.2.2

M.03
Rev. E

Not used.

CTS:	ITS:
N/A	N/A

M.04
Rev. E

The Actions for an inoperable 'AFW – Undervoltage Bus A01 and A02' channel have been revised. Because CTS only requires one of the two channels per bus to be operable, when the channel becomes inoperable the unit is required to be in hot shutdown in 8 hours and cold shutdown in 48 hours. ITS requires 2 channels per bus of 'AFW – Undervoltage Bus A01 and A02' to be operable. The Required Actions for one inoperable channel have been adopted from NUREG-1431, requiring the inoperable channel be placed in trip in 6 hours, or be in MODE 3 in 12 hours. If two channels of 'AFW – Undervoltage Bus A01 and A02' are inoperable, LCO 3.0.3 shall be entered, requiring the unit to be in MODE 3 in 7 hours. Therefore, adopting the Required Actions of NUREG-1431 imposes additional requirements on unit operation and is more restrictive.

CTS:	ITS:
15.03.05 T 15.03.05-03 03.B.I	LCO 3.03.02 COND H
	LCO 3.03.02 COND H RA H.1
	LCO 3.03.02 COND H RA H.2

Description of Changes - NUREG-1431 Section 3.03.02

15-Mar-01

DOC Number	DOC Text

M.05
Rev. E

The Actions for an inoperable 'SLI – Hi Hi Steam Flow' or 'SLI – Hi Steam Flow' channel have been revised. Because CTS only requires one of the two channels per loop to be operable for each of these functions, when the required channel becomes inoperable the unit is required to be in hot shutdown in 8 hours and cold shutdown in 61 hours (taking entry into CTS 15.3.0.A into account). ITS requires 2 channels per loop to be operable for each of these functions. Therefore, the Required Actions for one inoperable channel have been adopted from NUREG-1431, requiring the inoperable channel be placed in trip in 1 hour, or be in MODE 3 in 7 hours and in MODE 4 in 13 hours. Although the CTS would require the unit be in cold shutdown, once Tavg is reduced to below 350 F, the actions can be discontinued per CTS 15.3.0.C. Therefore the CTS allows additional time to reach the required condition. If two channels of either function are inoperable, LCO 3.0.3 shall be entered, requiring the unit to be in MODE 3 in 7 hours. Therefore, adopting the Required Actions of NUREG-1431 imposes additional requirements on unit operation and is more restrictive.

CTS:	ITS:
15.03.05 T 15.03.05-04 02.A (1)	LCO 3.03.02 COND D
	LCO 3.03.02 COND D RA D.1
	LCO 3.03.02 COND D RA D.2.1
	LCO 3.03.02 COND D RA D.2.2
15.03.05 T 15.03.05-04 02.B (1)	LCO 3.03.02 COND D
	LCO 3.03.02 COND D RA D.1
	LCO 3.03.02 COND D RA D.2.1
	LCO 3.03.02 COND D RA D.2.2

M.06
Rev. E

The Actions for an inoperable Manual CI channel have been revised. Because CTS only requires one of the two channels to be operable, when the channel becomes inoperable the unit is required to be in hot shutdown in 8 hours and cold shutdown in 48 hours. ITS requires 2 channels of Manual CI to be operable. The Required Actions for one inoperable channel have been adopted from NUREG-1431, requiring restoration of the channel to an operable status in 48 hours or be in MODE 3 in 54 hours and MODE 5 in 84 hours. If two channels of Manual CI are inoperable, LCO 3.0.3 shall be entered, requiring the unit to be in MODE 3 in 7 hours. Therefore, adopting the Required Actions of NUREG-1431 imposes additional requirements on unit operation and is more restrictive.

CTS:	ITS:
15.03.05 T 15.03.05-04 01.B	LCO 3.03.02 COND B RA B.1
	LCO 3.03.02 COND B RA B.2.1
	LCO 3.03.02 COND B RA B.2.2

Description of Changes - NUREG-1431 Section 3.03.02

15-Mar-01

DOC Number	DOC Text	
M.07 Rev. E	The Operator Actions of CTS Table 15.3.5-4, items 2.d, Steam Line Isolation - Manual, require the unit be in hot shutdown in 8 hours, if the Conditions of Column 3, Minimum Operable Channels, cannot be met. ITS LCO 3.3.2, Condition F is entered if a Steam Line Isolation - Manual channel is inoperable. Required Action F.1 requires the restoration of the inoperable channel in one hour, OR, per Required Action F.2.1, place the unit in MODE 3 in 7 hours AND, per Required Action F.2.2, place the unit in MODE 4 in 13 hours. This results in placing the unit in a MODE where the function is no longer required. This change imposes additional requirements on unit operation and is therefore more restrictive.	
	CTS:	**ITS:**
	15.03.05 T 15.03.05-04 02.D	LCO 3.03.02 COND F LCO 3.03.02 COND F RA F.1 LCO 3.03.02 COND F RA F.2.1 LCO 3.03.02 COND F RA F.2.2
M.08 Rev. E	CTS 15.4.1, Table 15.4.1-1, item 44, has been revised by the addition of MASTER RELAY TEST and SLAVE RELAY TEST surveillance requirements for ALL ESF Actuation logic (except Steam Line Isolation logic, which will only require a SLAVE RELAY TEST due to logic configuration). The Actuation logic consists of all circuitry housed within the actuation subsystems, including the initiating relay contacts responsible for actuating the ESF equipment. The MASTER RELAY TEST will verify OPERABILITY of the master relays once per 18 months. The SLAVE RELAY TEST will verify the OPERABILITY of the slave relays and the required actuation devices. This change imposes additional requirements on unit operation and is more restrictive.	
	CTS:	**ITS:**
	NEW	SR 3.03.02.04 SR 3.03.02.05
M.09 Rev. E	Not used.	
	CTS:	**ITS:**
	N/A	N/A

Description of Changes - NUREG-1431 Section 3.03.02

15-Mar-01

DOC Number	DOC Text	
M.10 Rev. E	CTS 15.3.5 Table 15.3.5-4 has been modified by the addition of item 4, Condensate Isolation. This function trips the condensate pump and heater drain pumps on high containment pressure. This function was added to the Point Beach design after an evaluation of IE Bulletin 80-04 showed that a single failure of a MFRV to close on a SI signal could allow feedwater addition from condensate and heater drain pumps to the faulted SG, leading to containment overpressure. The Condensate Isolation function is required to be OPERABLE in MODES 1, 2, and 3, except when all MFRVs and associated bypass valves are closed and de-activated. An inoperable channel is required to be placed in the tripped condition in 6 hours or place the unit in MODE 3 in 7 hours and MODE 4 in 13 hours. This change imposes additional requirements on unit operation and is therefore more restrictive.	
	CTS:	**ITS:**
	NEW	LCO 3.03.02 T3.03.02-01 07A LCO 3.03.02 T3.03.02-01 07B
M.11 Rev. A	The Channel Calibration surveillance requirement for CTS Table 15.4.1-1, item #10, Steam Generator Pressure, has been modified by the adoption of the ITS SR 3.3.2.8 Note. This Note requires verification that the time constants associated with the Steam Generator Pressure Function are adjusted to the prescribed values. This change imposes additional requirements on unit operation and is more restrictive.	
	CTS:	**ITS:**
	NEW	SR 3.03.02.08 NOTE
M.12 Rev. A	CTS Table 15.4.1-1 has been modified by the adoption of TADOT surveillance requirements for Manual Safety Injection, Manual Containment Spray, Manual Containment Isolation and Manual Steam Line Isolation. These Functions allow the operator to initiate each actuation from the control room in either anticipation or failure of automatic actuation. These Functions have no adjustable trip setpoint with which to associate an Allowable Value, and therefore are verified OPERABLE by the performance of a TADOT every 18 months. The Frequency is adequate, based on industry operating experience and is consistent with the typical refueling cycle. This change imposes additional requirements on unit operation and is more restrictive.	
	CTS:	**ITS:**
	NEW	SR 3.03.02.07
M.13 Rev. E	Not used.	
	CTS:	**ITS:**
	N/A	N/A

Description of Changes - NUREG-1431 Section 3.03.02

15-Mar-01

DOC Number	DOC Text	
M.14 Rev. A	CTS Table 15.4.1-1 has been modified by the adoption of CHANNEL CHECK, COT and CHANNEL CALIBRATION surveillance requirements for the Pressurizer Pressure SI Block. This interlock enables the Pressurizer Pressure-Low and Steam Line Pressure- Low SI actuation signals above the Pressurizer Pressure SI Block setpoint. This safety function will be verified OPERABLE by the performance of a CHANNEL CHECK every 12 hours, a COT every 92 days and a CHANNEL CALIBRATION every 18 months. This change imposes additional requirements on unit operation and is more restrictive.	
	CTS:	**ITS:**
	NEW	SR 3.03.02.01 SR 3.03.02.03 SR 3.03.02.08
M.15 Rev. A	CTS Table 15.3.5-3 has been modified by the addition of item #4, Pressurizer Pressure SI Block. This item will provide the Limiting Condition for Operation for this Function. Adding this item to CTS Table 15.3.5-3 clarifies the MODES under which the interlock is required to be OPERABLE and provides Required Actions to take in the event of one or more inoperable channels. This change imposes additional requirements on unit operation and is more restrictive.	
	CTS:	**ITS:**
	NEW	LCO 3.03.02 COND I LCO 3.03.02 COND I RA I.1 LCO 3.03.02 COND I RA I.2.1 LCO 3.03.02 COND I RA I.2.2 LCO 3.03.02 T3.03.02-01 08
M.16 Rev. A	Table 15.4.1-1 has been modified by the addition of CHANNEL CHECK, COT and CHANNEL CALIBRATION surveillance requirements for the Steam Flow-High, Steam Flow-High High, and Tavg-Low instrumentation that provides signals to the Steam Line Isolation Function. These signals, coincident with an SI signal, provide closure of the MSIVs during a SLB or inadvertent opening of a relief or safety valve, to maintain at least one SG as a heat sink for the reactor, and limit the mass and energy released to the containment. Verification of the OPERABILITY of these functions will be through the performance of the CHANNEL CHECK, COT and CHANNEL CALIBRATION surveillances. This change imposes additional requirements on unit operation and is more restrictive.	
	CTS:	**ITS:**
	NEW	SR 3.03.02.01 SR 3.03.02.03 SR 3.03.02.08

DOC Number	DOC Text

M.17
Rev. E

CTS Table 15.3.5-1 has been modified by the addition of a nominal field setting for High SG Water Level Feedwater Isolation. This field setting was developed outside the scope of the Setpoint Methodology and can be found in documents provided by the NSSS supplier. Adopting this field setting does not imply that an analytical limit exists for this function, or that this function is necessary to mitigate any analyzed accident.

CTS:	ITS:
NEW	LCO 3.03.02 T3.03.02-01 Note (f)

M.18
Rev. E

CTS 15.3.5, Table 15.3.5-3, Functions 1.a (Manual SI) and 3.b.i (AFW Turbine Driven Pump Start on Undervoltage Buses A01 and A02), and Table 15.3.5-4, Functions 1.b (Manual CI), 2.a (Hi Hi Steam Flow SLI), and 2.b (Hi Steam Flow SLI), have been revised to require additional channels to be operable. In the proposed ITS LCO 3.3.2, Table 3.3.2-1, the Manual SI Function will require 2 channels; AFW Actuation on Undervoltage Bus A01 and A02 Function will require 2 channels/each bus; the Manual CI Function will require 2 channels; the Hi Hi Steam Flow SLI Function will require 2 channels/loop; and the High Steam Flow SLI Function will require 2 channels/loop. Increasing the required number of channels for each of these functions imposes additional requirements on unit operation and is therefore more restrictive. This change is consistent with NUREG-1431.

CTS:	ITS:
15.03.05 T 15.03.05-03 01.A	LCO 3.03.02 T3.03.02-01 01A
15.03.05 T 15.03.05-03 03.B.I	LCO 3.03.02 T3.03.02-01 06D
15.03.05 T 15.03.05-04 01.B	LCO 3.03.02 T3.03.02-01 03A
15.03.05 T 15.03.05-04 02.A (1)	LCO 3.03.02 T3.03.02-01 04E-01
15.03.05 T 15.03.05-04 02.B (1)	LCO 3.03.02 T3.03.02-01 04D-01

M.19
Rev. E

The Actions for an inoperable Manual SI channel have been revised. Because CTS only requires one of the two channels to be operable, when the channel becomes inoperable the unit is required to be in hot shutdown in 8 hours and cold shutdown in 48 hours. ITS requires 2 channels of Manual SI to be operable. The Required Actions for one inoperable channel have been adopted from NUREG-1431, requiring restoration of the channel to an operable status in 48 hours or be in MODE 3 in 54 hours and MODE 5 in 84 hours. If two channels of Manual SI are inoperable, LCO 3.0.3 shall be entered, requiring the unit to be in MODE 3 in 7 hours. Therefore, adopting the Required Actions of NUREG-1431 imposes additional requirements on unit operation and is more restrictive.

CTS:	ITS:
15.03.05 T 15.03.05-03 01.A	LCO 3.03.02 COND B
	LCO 3.03.02 COND B RA B.1
	LCO 3.03.02 COND B RA B.2.1
15.03.05 T 15.03.05-03 01.A*	LCO 3.03.02 COND B RA B.2.2

A.1

15.3.5 INSTRUMENTATION SYSTEM

Operational Safety Instrumentation

Applicability: Applies to plant instrumentation systems.

Objectives: To provide for automatic initiation of the Engineered Safety Features in the event that principal process variable limits are exceeded, and to delineate the conditions of the plant instrumentation and safety circuits necessary to ensure reactor safety.

Specification:

A. The Engineered Safety Features initiation instrumentation setting limits shall be as stated in Table 15.3.5-1.

B. For on-line testing or in the event of a sub-system instrumentation channel failure, plant operation at rated power shall be permitted to continue in accordance with Tables 15.3.5-2 through 15.3.5-4. < See LCO 3.3.1 >

C. In the event the number of channels of a particular sub-system in service falls below the limits given in the column entitled Minimum Operable Channels, operation shall be limited according to the requirement shown in Tables 15.3.5-2 through 15.3.5-4, Operator Action when minimum operable channels unavailable. < See LCO 3.3.1 >

D. The post-accident monitoring instrumentation channels in Table 15.3.5-5 shall be operable. In the event the number of channels in a particular sub-system falls below the minimum number of operable channels given in Column 2, operation and subsequent operator action shall be in accordance with Column 3. This specification is not applicable in the cold or refueling shutdown conditions. < See LCO 3.3.3 >

Basis: Instrumentation has been provided to sense accident conditions and to initiate operation of the Engineered Safety Features(1)

A.2

Separate Condition entry is allowed for each Function. A.2

E
RAI 3.3.2-8

A.1

TABLE 15.3.5-1
(PAGE 1 OF 2)
ENGINEERED SAFETY FEATURES INITIATION INSTRUMENT SETTING LIMITS

NO.	FUNCTIONAL UNIT	CHANNEL	SETTING LIMIT	
1	High Containment Pressure (Hi)	Safety Injection*	≤ 6 psig	LCO 3.3.2, Table 3.3.2-1, #1.c
2	High Containment Pressure (Hi-Hi)	a. Containment Spray	≤ 30 psig	LCO 3.3.2, Table 3.3.2-1, #2.c
		b. Steam Line Isolation of Both Lines	≤ 20 psig	LCO 3.3.2, Table 3.3.2-1, #4.c
3	Pressurizer Low Pressure	Safety Injection*	≥ 1715 psig	LCO 3.3.2, Table 3.3.2-1, #1.d
4	Low Steam Line Pressure	Safety Injection*	≥ 500 psig	LCO 3.3.2, Table 3.3.2-1, #1.e
		Lead Time Constant	≥ 12 seconds	
		Lag Time Constant	≤ 2 seconds	
5	High Steam Flow in a Steam Line Coincident with Safety Injection and Low T_{AVG}	Steam Line Isolation of Affected Line	≤ d/p corresponding to 0.66 x 10^6 lb/hr at 1005 psig	LCO 3.3.2, Table 3.3.2-1, #4.d-1
			≥ 540°F	LCO 3.3.2, Table 3.3.2-1, #4.d-3
6	High-high Steam Flow in a Steam Line Coincident with Safety Injection	Steam Line Isolation of Affected Line	≤ d/p corresponding to 4 x 10^6 lb/hr at 806 psig	LCO 3.3.2, Table 3.3.2-1, #4.e-1
7	Low-low Steam Generator Water Level	Auxiliary Feedwater Initiation	≥20% of narrow range instrument	
			A.3 → ~~≥5% of narrow range instrument (Unit 1)**~~	LCO 3.3.2, Table 3.3.2-1, #6.b
8	Undervoltage on 4 KV Busses	Auxiliary Feedwater Initiation	≥ 3120 V	LCO 3.3.2, Table 3.3.2-1, #6.d
9	High Steam Generator Water Level	Feedwater Isolation	*** ← M.17	

* Initiates also containment isolation, feedwater line isolation and starting of all containment fans.

~~** This setting limit applies to Unit 1 until the narrow range lower tap is changed to the lower position consistent with Unit 2~~
~~d/p means differential pressure~~

*** Field setting ≤ 78% of narrow range instrument (nominal). ← M.17

A.3

E
RAI 3.3.2-3

TABLE 15.3.5-3
ENGINEERED SAFETY FEATURES

NO.	FUNCTIONAL UNIT	1 NO. OF CHANNELS	2 NO. OF CHANNELS TO TRIP	3 MINIMUM OPERABLE CHANNELS	4 PERMISSIBLE BYPASS CONDITIONS	OPERATOR ACTION IF CONDITIONS OF COLUMN 3 CANNOT BE MET
1.	SAFETY INJECTION					
a.	Manual	2	1	2	1,2,3,4	Be in hot shutdown in 8 hours*
b.	Hi Containment Pressure	3	2	2	1,2,3	Be in hot shutdown in 8 hours*
c.	Steam Generator Low Steam Pressure/Loop	3	2	2	1,2,3(b)	Be in hot shutdown in 8 hours*
d.	Low Pressurizer Pressure	3	2	2	Primary pressure <1800 psig	Be in hot shutdown in 8 hours*
	Insert 1.e				1,2,3(a)	Be in hot shutdown in 8 hours*
2.	CONTAINMENT SPRAY				Primary pressure <1800 psig	
a.	Manual****	2	2	2	1,2,3,4	Be in hot shutdown in 8 hours*
b.	Hi-Hi Containment Pressure (Containment Spray)	2 sets of 3	2 of 3 in each set	2 per set*	1,2,3	Be in hot shutdown in 8 hours*
	Insert 2.c					
3.	AUXILIARY FEEDWATER					
a.	Start Motor-Driven Pumps					
i.	Low Low Steam Gen. Water Level	3/SG	2/either SG	2/SG**	1,2,3	Be in hot shutdown in 8 hours*
ii.	SI signal	SI Initiating Conditions as in Item 1				Be in hot shutdown in 8 hours*

RAI 3.3.2-2
RAI 3.3.2-5
RAI 3.3.2-6
Errata#160

TABLE 15.3.5-3 (continued)
ENGINEERED SAFETY FEATURES

NO.	FUNCTIONAL UNIT	1 ~~NO. OF CHANNELS~~	2 ~~NO. OF CHANNELS TO TRIP~~	3 MINIMUM OPERABLE CHANNELS	4 PERMISSIBLE BYPASS CONDITIONS	OPERATOR ACTION IF CONDITIONS OF COLUMN 3 CANNOT BE MET
b.	Start Turbine-Driven Pump					
	i. Undervoltage on 4KV Buses (A01 & A02)	~~2/each bus~~	~~1/each bus~~	2 → 1/each bus	1,2 / 1,2,3 (A.5)	Be in hot shutdown in 8 hours* (Insert H, M.4)
	ii. Low Low Steam Gen. Water Level	~~3/SG~~	~~2/each SG~~	3 → 2/SG**	1,2 / 1,2,3 (A.5)	Be in hot shutdown in 8 hours* (Insert D, M.2)
4.	SAFETY-RELATED ELECTRICAL LOADS					
a.	4.16KV Buses (A05, A06)					
	i. Degraded Voltage	3/bus	2/bus	2/bus**	***	
	ii. Loss of Voltage	2/bus	1/bus	1/bus	***	See LCO 3.3.5
	*****	3/bus	2/bus	2/bus**	***	
b.	480V Buses (B03, B04)					
	i. Loss of Voltage	3/bus	2/bus	2/bus**	Be in hot shutdown in 8 hours*	

* If minimum conditions are not met within 24 hours after reaching hot shutdown, the unit shall be in cold shutdown within 48 hours of the event causing the unit shutdown.

** If a channel is determined to be inoperable, resulting in one less than the total number of channels being operable, power operation may continue if the following conditions are met:
1. The minimum number of operable channels is still satisfied.
2. The affected channel is placed in trip within 1 hour.

See LCO 3.3.5

*** Declare the associated standby emergency power supply inoperable for the affected bus. The applicable Limiting Condition for Operation (LCO) shall be entered. Separate LCOs may be entered for the Degraded Voltage and Loss of Voltage functions.

**** Both switches must be activated simultaneously.

***** Use the 3/bus specification for each A05 and A06 bus that has been modified to the 2 out of 3 logic for the loss of voltage protection function.

See LCO 3.3.5

(a) Pressurizer Pressure > 1800 psig

(b) Pressurizer Pressure > 1800 psig, except during RCS hydrostatic testing.

RAI 3.3.2-2
RAI 3.3.2-5
RAI 3.3.2-6
RAI 3.3.2-5
RAI 3.3.2-6

TABLE 15.3.5-4
INSTRUMENT OPERATING CONDITIONS FOR ISOLATION FUNCTIONS

NO.	FUNCTIONAL UNIT	1 ~~TOTAL NO. OF CHANNELS~~	2 ~~NO. OF CHANNELS TO TRIP~~	3 MINIMUM OPERABLE CHANNELS	4 PERMISSIBLE BYPASS CONDITIONS	OPERATOR ACTIONS IF CONDITIONS OF COLUMN 3 CANNOT BE MET
1.	CONTAINMENT ISOLATION					
a.	Safety Injection	See Items 1b, c, and d of Table 15.3.5-3				~~Be in hot shutdown in 8 hours~~*
b.	Manual	Insert 1.c				
2.	STEAM LINE ISOLATION					
a.	Hi Hi Steam Flow with	~~2~~	~~1~~	2 → 1 (M.18)	1,2,3,4	Be in hot shutdown in 8 hours
						Insert B (M.6)
		~~2/loop~~	~~1/either loop~~	1/loop	1,2(c),3(c)	Be in hot shutdown in 8 hours*
				2/loop** (M.18)		Insert D (M.5)
	Safety Injection	See Items 1b, c, and d of Table 15.3.5-3				~~Be in hot shutdown in 8 hours~~*
b.	Hi Steam Flow and	~~2/loop~~	~~1/either loop~~	1/loop	1,2(c),3(c)	Be in hot shutdown in 8 hours*
				2/loop** (M.18)		Insert D (M.5)
	Low Tavg with	4	~~2~~	3**	1,2(c),3(c)	Insert D (M.2)
						Be in hot shutdown in 8 hours*
	Safety Injection	See Items 1b, c, and d of Table 15.3.5-3				~~Be in hot shutdown in 8 hours~~*
c.	Hi Containment Pressure	~~3~~	~~2~~	3 → 2**	1,2(c),3(c)	Insert D (M.2)
						Be in hot shutdown in 8 hours*
d.	Manual	Insert 2.e				
3.	FEEDWATER ISOLATION					
a.	Hi Steam Generator Water Level	~~1/loop~~	~~1/loop~~	A.4: 1/loop		Be in hot shutdown in 8 hours
						Insert F (M.7)
		~~3/SG~~	~~2/SG~~	3 → 2/SG**	1,2(d),3(d)	Insert D (M.2)
						Be in hot shutdown in 8 hours*
b.	Safety Injection	See Item 1 of Table 15.3.5-3				~~Be in hot shutdown in 8 hours~~*

Insert 3.c

Insert 4

* If minimum conditions are not met within 24 hours, steps shall be taken on the affected unit to place the unit in cold shutdown conditions.

** If a channel is determined to be inoperable, resulting in one less than the total number of channels being operable, power operation may continue if the following conditions are met:

1. The minimum number of operable channels is still satisfied.
2. The affected channel is placed in trip within 1 hour.

(c) Except when both MSIVs are closed and de-activated.

(d) Except when all MFRVs and associated bypass valves are closed and de-activated.

RAI 3.3.2-2
RAI 3.3.2-5
RAI 3.3.2-6

INSERT B

Restore channel to OPERABLE status within 48 hours OR be in MODE 3 in 54 hours and MODE 5 in 84 hours. (E) RAI 3.3.2-2

INSERT D

Be in MODE 3 in 7 hours and be in MODE 4 in 13 hours. (E) RAI 3.3.2-5

INSERT E

Restore channel(s) to OPERABLE status within 1 hour, OR be in MODE 3 in 7 hours and be in MODE 5 in 37 hours. (E) RAI 3.3.2-2

INSERT H (E) RAI 3.3.2-2

Place inoperable channel in the tripped condition within 6 hours, OR be in MODE 3 in 12 hours.

INSERT F (E) RAI 3.3.2-2

Restore channel to OPERABLE status in 1 hour or be in MODE 3 in 7 hours and be in MODE 4 in 13 hours.

Table 15.3.5-3 Inserts

Function	Applicable MODES	Required Channels	Conditions
1. Safety Injection			
e. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	Restore train to OPERABLE status within 6 hours, otherwise be in MODE 3 in 12 hours and MODE 5 in 42 hours.
2. Containment Spray			
c. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	Restore train to OPERABLE status within 6 hours, otherwise be in MODE 3 in 12 hours and MODE 5 in 42 hours.
3. Auxiliary Feedwater			
a. Start Motor Driven Pumps iii. Automatic Actuation Logic and Actuation Relays	1,2,3	2 trains	Restore train to OPERABLE status within 6 hours, otherwise be in MODE 3 in 12 hours and MODE 4 in 18 hours.
3. Auxiliary Feedwater			
b. Start Turbine Driven Pump iii. Automatic Actuation Logic and Actuation Relays	1,2,3	2 trains	Restore train to OPERABLE status within 6 hours, otherwise be in MODE 3 in 12 hours and MODE 4 in 18 hours.
4. Pressurizer Pressure SI Block	1,2,3	3	Verify interlock is in the required state for existing unit conditions within 1 hour, or be in MODE 3 in 7 hours and in MODE 4 in 13 hours.

E
RAI 3.3.2-6
Errata #160

E
RAI 3.3.2-6

Table 15.3.5-4 Inserts

Function	Applicable MODES	Required Channels	Conditions
1. Containment Isolation			
c. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	Restore train to OPERABLE status within 6 hours, otherwise be in MODE 3 in 12 hours and MODE 5 in 42 hours.
2. Steam Line Isolation			
e. Automatic Actuation Logic and Actuation Relays	1,2[(c)],3[(c)]	2 trains	Restore train to OPERABLE status within 6 hours, otherwise be in MODE 3 in 12 hours and MODE 4 in next 18 hours.
3. Feedwater Isolation			
c. Automatic Actuation Logic and Actuation Relays	1,2[(d)],3[(d)]	2 trains	Restore train to OPERABLE status within 6 hours, otherwise be in MODE 3 in 12 hours and MODE 4 in 18 hours.
4. Condensate Isolation			
a. Containment Pressure-High	1,2,3	3	Place inoperable channel in tripped condition within 1 hour, otherwise be in MODE 3 in 7 hours and MODE 4 in 13 hours.
b. Automatic Actuation Logic and Actuation Relays	1,2,3	2 trains	Restore train to OPERABLE status within 6 hours, otherwise be in MODE 3 in 12 hours and MODE 4 in 18 hours.

Notes:

(c) Except when both MSIVs are closed and de-activated.

(d) Except when all MFRVs and associated bypass valves are closed and de-activated.

E

RAI 3.3.2-2
RAI 3.3.2-6

A.1

TABLE 15.4.1-1 (continued)

NO.	CHANNEL DESCRIPTION	CHECK	CALIBRATE	TEST	PLANT CONDITIONS WHEN REQUIRED	
36.	Radiation Monitoring System					
	- RE-218 WDS Liquid Monitor	(7)	R(14)	Q	ALL	< See LCOs 3.3.1, 3.3.3, 3.3.7, and 3.4.15 >
	- RE-223 Waste Distillate Overboard Monitor	(7)	R(14)	Q	ALL	
	- RE-231 A Steam Line Release Monitor	M(1)	R(14)	-	ALL	
	- RE-231 B Steam Line Release Monitor	M(1)	R(14)	-	ALL	
	- RE-101 Control Room Monitor	S	R(14)	Q	ALL	
	- RE-235 Control Room Noble Gas Monitor	S	R(14)	Q	ALL	
	- RE-215 Air Ejector Monitor	D(1)	R(14)	-	ALL	
37.	Reactor Vessel Fluid Level System	M	R	-	ALL	< See LCO 3.3.3 >
38.	Refueling Water Storage Tank Level	-	R	-	ALL	< See LCO 3.5.4 >
39.	Residual Heat Removal Pump Flow	-	R	-	ALL	< See LCO 3.3.1 >
40.	Safety Valve Position Indicator	M	R	-	ALL	< See LCO 3.3.3 >
41.	Subcooling Margin Monitor	M	R	-	ALL	< See LCO 3.3.3 >
42.	Deleted					
43.	Volume Control Tank Level	-	A	-	ALL	< See LCO 3.4.15 >
44.	Reactor Protection System and Emergency Safety Feature Actuation System Logic	< See LCO 3.3.1 > -	M.8 → SR 3.3.2.4 SR 3.3.2.5	M(1,23) A.8	~~ALL~~ A.10	E RAI 3.3.2-10
45.	Reactor Trip System Interlocks					
	-Intermediate Range Neutron Flux, P-6	-	R(24)	R	ALL	< See LCO 3.3.1 >
	-Power Range Neutron Flux, P-8	-	R(24)	R	ALL	
	-Power Range Neutron Flux, P-9	-	R(24)	R	ALL	
	-Power Range Neutron Flux, P-10	-	R(24)	R	ALL	
	-1st Stage Turbine Impulse Pressure	-	R(24)	R	ALL	

Add Manual SI, Manual CS, Manual CI, and Manual SLI ← M.12

Add Pressurizer Pressure SI Block ← M.14

Add Steam Flow and Tavg-Low ← M.16

E Errata #160

Table 15.4.1-1 Inserts

	Channel Description	Check	Calibrate	Test	MODE
46.	Manual Safety Injection	-	-	SR 3.3.2.7	1,2,3,4
47.	Manual Containment Spray	-	-	SR 3.3.2.7	1,2,3,4
48.	Manual Steam Line Isolation	-	-	SR 3.3.2.7	1,2[(d)],3[(d)]
49.	Manual Containment Isolation	-	-	SR 3.3.2.7	1,2,3,4
50.	Not used.				
51.	Pressurizer Pressure SI Block	SR 3.3.2.1	SR 3.3.2.8	SR 3.5.2.3	1,2,3
52.	Steam Flow				
	- High	SR 3.3.2.1	SR 3.3.2.8	SR 3.3.2.3	1,2[(d)],3[(d)]
	- High High	SR 3.3.2.1	SR 3.3.2.8	SR 3.3.2.3	1,2[(d)],3[(d)]
53.	Tavg-Low	SR 3.3.2.1	SR 3.3.2.8	SR 3.3.2.3	1,2[(d)],3[(d)]

(d) Except when all MSIVs are closed and de-activated.

E

RAI 3.3.2-10
Errata #160

Justification For Deviations - NUREG-1431 Section 3.03.02

15-Mar-01

JFD Number	JFD Text	
01 Rev. E	Not used.	
	ITS:	**NUREG:**
	N/A	N/A
02 Rev. E	Not used.	
	ITS:	**NUREG:**
	N/A	N/A
03 Rev. A	LCO 3.3.2, Condition B and Required Action B.1 references to "train" or "trains" have been deleted. Actuation functions involving "trains" of instrumentation, that previously referred to Condition B, have not been retained in ITS. Condition B provides Required Actions for a loss of channels associated with manual actuation of Safety Injection, Containment Spray and Containment Isolation. Therefore the restoration of "trains" of instrumentation no longer applies to this Condition.	
	ITS:	**NUREG:**
	LCO 3.03.02 COND B	LCO 3.03.02 COND B
	LCO 3.03.02 COND B RA B.1	LCO 3.03.02 COND B RA B.1
04 Rev. E	Not used.	
	ITS:	**NUREG:**
	N/A	N/A
05 Rev. A	ITS LCO 3.3.2, Table 3.3.2-1, "Applicable Modes or Other Specified Conditions" column has been relabeled "Applicable MODES", to alleviate confusion with the usage of "Conditions" in another column in the Table. Additionally, text added to the Bases description of SR 3.3.2.5, SR 3.3.2.7, and SR 3.3.2.8, via TSTF-205, has not been incorporated into the ITS. Point Beach design necessitates COT and TADOT testing that is inconsistent with the verbiage added by TSTF-205.	
	ITS:	**NUREG:**
	LCO 3.03.02 T3.03.02-01	LCO 3.03.02 T3.03.02-01

Justification For Deviations - NUREG-1431 Section 3.03.02

15-Mar-01

JFD Number	JFD Text
06 Rev. A	The brackets have been removed and the proper plant specific information has been provided. In some instances, even though the information was designated as being site specific information in the LCO (bracketed), the corresponding Bases information was not bracketed. These cases are self evident, corresponding to the bracketed information in the LCO and the have had the appropriate site specific information provided.

ITS:	NUREG:
B 3.03.02	B 3.03.02
LCO 3.03.02 T3.03.02-01 01C	LCO 3.03.02 T3.03.02-01 01C
LCO 3.03.02 T3.03.02-01 01D	LCO 3.03.02 T3.03.02-01 01D
LCO 3.03.02 T3.03.02-01 01E	LCO 3.03.02 T3.03.02-01 01E-01
LCO 3.03.02 T3.03.02-01 02C	LCO 3.03.02 T3.03.02-01 02C-02
LCO 3.03.02 T3.03.02-01 04C	LCO 3.03.02 T3.03.02-01 04C
LCO 3.03.02 T3.03.02-01 04D-01	LCO 3.03.02 T3.03.02-01 04G-01
LCO 3.03.02 T3.03.02-01 04E-01	LCO 3.03.02 T3.03.02-01 04H-01
LCO 3.03.02 T3.03.02-01 05A	LCO 3.03.02 T3.03.02-01 05A LCO 3.03.02 T3.03.02-01 05A
LCO 3.03.02 T3.03.02-01 05B	LCO 3.03.02 T3.03.02-01 05B LCO 3.03.02 T3.03.02-01 05B
LCO 3.03.02 T3.03.02-01 06B	LCO 3.03.02 T3.03.02-01 06C
LCO 3.03.02 T3.03.02-01 06D	LCO 3.03.02 T3.03.02-01 06F
LCO 3.03.02 T3.03.02-01 08	LCO 3.03.02 T3.03.02-01 08B

07 Rev. A	LCO 3.3.2 Bases discussions of Containment Pressure instrumentation transmitters have been modified by the deletion of "(d/p cells)." Point Beach design does not utilize d/p cells to measure Containment Pressure.

ITS:	NUREG:
B 3.03.02	B 3.03.02

Justification For Deviations - NUREG-1431 Section 3.03.02

15-Mar-01

JFD Number	JFD Text
08 Rev. A	Consistent with Point Beach CTS Table 15.3.5-3, item 2.b, if a channel is determined to be inoperable, resulting in one less than the total number of channels being operable, power operation may continue if the affected channel is placed in trip. The Containment Pressure High High Function operates on a two-out-of-three logic configuration. The failure of one channel places the Function in a two-out-of-two configuration. This requires placing the inoperable channel in trip to place the Function in a one-out-of-two configuration that satisfies the redundancy requirements. This change also necessitates a wording change to the Note modifying the Required Action such that the inoperable channel may be taken out of the tripped condition for up to 4 hours to facilitate surveillance testing of other channels while avoiding inadvertent actuation. As a result of these changes, Condition E and associated Required Actions duplicate Condition D and associated Required Actions. Therefore Condition E and associated Required Actions are deleted. This also results in the re-lettering of subsequent Conditions and Required Actions.

ITS:	NUREG:
N/A	N/A

JFD Number	JFD Text
09 Rev. E	ITS Condition F applies to the Manual Steam Line Isolation channels. PBNP design incorporates 2 switches; one for each MSIV. To effect a manual steam line isolation of both loops requires both switches. In order to reflect the loss of function when a channel is inoperable and the importance of restoring the channel to operable status, the Completion Time of Required Action F.1 is changed to one hour. The Completion Times of Required Actions F.2.1 and F.2.2 have also been changed to maintain the 6 hours allowed to place the unit in MODE 3 and the 12 hours allowed to place the unit in MODE 4.

ITS:	NUREG:
LCO 3.03.02 COND F RA F.1	LCO 3.03.02 COND F RA F.1
LCO 3.03.02 COND F RA F.2.1	LCO 3.03.02 COND F RA F.2.1
LCO 3.03.02 COND F RA F.2.2	LCO 3.03.02 COND F RA F.2.2

Justification For Deviations - NUREG-1431 Section 3.03.02

15-Mar-01

JFD Number	JFD Text
10 Rev. A	NUREG-1431, Condition H and associated Required Actions have not been retained in ITS. This Condition addresses an inoperable train of Feedwater Isolation Automatic Actuation Logic and Actuation Relays for units that do not require this Function operable in MODE 3 At Point Beach, the Feedwater Isolation Automatic Actuation Logic and Actuation Relays Function is required to be OPERABLE in MODE 3. Deletion of this Condition also results in the re-lettering of subsequent Conditions and associated Required Actions.

ITS:	NUREG:
B 3.03.02	B 3.03.02
LCO 3.03.02 COND H	LCO 3.03.02 COND I
LCO 3.03.02 COND H RA H.1	LCO 3.03.02 COND I RA I.1
LCO 3.03.02 COND H RA H.2	LCO 3.03.02 COND I RA I.2
LCO 3.03.02 T3.03.02-01 06D	LCO 3.03.02 T3.03.02-01 06F
N/A	LCO 3.03.02 COND H LCO 3.03.02 COND H RA H.1 LCO 3.03.02 COND H RA H.1 NOTE LCO 3.03.02 COND H RA H.2

JFD Number	JFD Text
11 Rev. E	LCO 3.3.2 Bases discussions of the Manual Containment Isolation, Manual Steam Line Isolation and AFW-Undervoltage Bus A01 & A02 have been modified. A description of a channel for each function has been added to aid in the verification of OPERABILITY of each function.

ITS:	NUREG:
B 3.03.02	B 3.03.02

Justification For Deviations - NUREG-1431 Section 3.03.02

15-Mar-01

JFD Number	JFD Text

12
Rev. A

NUREG-1431 Condition K provides actions for inoperable channels associated with Functions in Table 3.3.2-1 which are not a part of the Point Beach ESFAS design or current licensing basis. Therefore these Conditions and associated Required Actions are not adopted in the ITS. This change also results in the re-lettering of subsequent Conditions and Required Actions.

ITS:	NUREG:
B 3.03.02	B 3.03.02
LCO 3.03.02 COND I	LCO 3.03.02 COND L
LCO 3.03.02 COND I RA I.1	LCO 3.03.02 COND L RA L.1
LCO 3.03.02 COND I RA I.2.1	LCO 3.03.02 COND L RA L.2.1
LCO 3.03.02 COND I RA I.2.2	LCO 3.03.02 COND L RA L.2.2
LCO 3.03.02 T3.03.02-01 08	LCO 3.03.02 T3.03.02-01 08B
N/A	LCO 3.03.02 COND K LCO 3.03.02 COND K RA K.1 LCO 3.03.02 COND K RA K.1 NOTE LCO 3.03.02 COND K RA K.2.1 LCO 3.03.02 COND K RA K.2.2

Justification For Deviations - NUREG-1431 Section 3.03.02

15-Mar-01

JFD Number	JFD Text
13 Rev. A	Point Beach ESFAS design does not include a semi-automatic tester nor the capability to pulse test the master relay coils for continuity. Therefore NUREG-1431, SR 3.3.2.2 has not been adopted in ITS. The ACTUATION LOGIC TEST surveillance requirement for the ESFAS Automatic Actuation Logic and Actuation Relays refer to NUREG-1431, SR 3.3.2.3, which excludes the continuity check. This change also results in the re-numbering of subsequent surveillance requirements.

ITS:	NUREG:
B 3.03.02	B 3.03.02
LCO 3.03.02 T3.03.02-01 01A	LCO 3.03.02 T3.03.02-01 01A
LCO 3.03.02 T3.03.02-01 01C	LCO 3.03.02 T3.03.02-01 01C
LCO 3.03.02 T3.03.02-01 01D	LCO 3.03.02 T3.03.02-01 01D
LCO 3.03.02 T3.03.02-01 01E	LCO 3.03.02 T3.03.02-01 01E-01
LCO 3.03.02 T3.03.02-01 02A	LCO 3.03.02 T3.03.02-01 02A
LCO 3.03.02 T3.03.02-01 02C	LCO 3.03.02 T3.03.02-01 02C-02
LCO 3.03.02 T3.03.02-01 03A	LCO 3.03.02 T3.03.02-01 03A-01
LCO 3.03.02 T3.03.02-01 04A	LCO 3.03.02 T3.03.02-01 04A
LCO 3.03.02 T3.03.02-01 04C	LCO 3.03.02 T3.03.02-01 04C
LCO 3.03.02 T3.03.02-01 04D-01	LCO 3.03.02 T3.03.02-01 04G-01
LCO 3.03.02 T3.03.02-01 04E-01	LCO 3.03.02 T3.03.02-01 04H-01
LCO 3.03.02 T3.03.02-01 05B	LCO 3.03.02 T3.03.02-01 05B
LCO 3.03.02 T3.03.02-01 06A	LCO 3.03.02 T3.03.02-01 06B
LCO 3.03.02 T3.03.02-01 06B	LCO 3.03.02 T3.03.02-01 06C
LCO 3.03.02 T3.03.02-01 06D	LCO 3.03.02 T3.03.02-01 06F
LCO 3.03.02 T3.03.02-01 08	LCO 3.03.02 T3.03.02-01 08B
N/A	SR 3.03.02.02
SR 3.03.02.02 NOTE	SR 3.03.02.03 NOTE
SR 3.03.02.06	SR 3.03.02.07
SR 3.03.02.07	SR 3.03.02.08
SR 3.03.02.08	SR 3.03.02.09
SR 3.03.02.08 NOTE	SR 3.03.02.09 NOTE

Justification For Deviations - NUREG-1431 Section 3.03.02

15-Mar-01

JFD Number	JFD Text
14 Rev. A	NUREG-1431 SR 3.3.2.4, requires the performance of a MASTER RELAY TEST every 31 days on a staggered test basis, and SR 3.3.2.6, SLAVE RELAY TEST is required to be performed every 92 days. Point Beach ESFAS design is such that these components cannot be tested during reactor operation without ESF equipment actuation leading to the disruption of power operation. During plant shutdown, the components can be tested by coincident tripping of instrument channels and the consequent operation of the master and slave relays in the entire downstream initiating system. Therefore the Frequencies of the MASTER RELAY TEST and the SLAVE RELAY TEST are changed to 18 months. This change also results in reordering of the SRs.

ITS:	NUREG:
B 3.03.02	B 3.03.02
SR 3.03.02.03	SR 3.03.02.05
SR 3.03.02.04	SR 3.03.02.04
SR 3.03.02.05	SR 3.03.02.06

15 Rev. A	The ITS definition of TADOT has been modified to not include verification of the setpoint. Therefore it is no longer necessary to exclude this verification from SR 3.3.2.6 and SR 3.3.2.7, resulting in deletion of the Note from each of these SRs.

ITS:	NUREG:
B 3.03.02	B 3.03.02
N/A	SR 3.03.02.07 NOTE SR 3.03.02.08 NOTE

16 Rev. A	LCO 3.3.2 Bases discussion of the Pressurizer Pressure Safety Injection Block has been modified to clarify the safety function of the block in MODES 1, 2 and 3. Although the interlock allows the operator to manually block the Pressurizer Pressure-Low and Steam Line Pressure-Low SI signals to facilitate a normal unit cooldown and depressurization without actuation of SI, the safety function of the interlock is to automatically enable these SI signals when above the pressurizer pressure setpoint.

ITS:	NUREG:
B 3.03.02	B 3.03.02

Justification For Deviations - NUREG-1431 Section 3.03.02

15-Mar-01

JFD Number	JFD Text
17 Rev. A	Point Beach current licensing basis does not include the performance of ESF component Response Time Testing. Therefore, NUREG-1431, SR 3.3.2.10 is not being adopted in the ITS. Additionally, text added to the Bases description of SR 3.3.2.10, via TSTF-111, has not been incorporated.

ITS:	NUREG:
B 3.03.02	B 3.03.02
LCO 3.03.02 T3.03.02-01 01C	LCO 3.03.02 T3.03.02-01 01C
LCO 3.03.02 T3.03.02-01 01D	LCO 3.03.02 T3.03.02-01 01D
LCO 3.03.02 T3.03.02-01 01E	LCO 3.03.02 T3.03.02-01 01E-01
LCO 3.03.02 T3.03.02-01 02C	LCO 3.03.02 T3.03.02-01 02C-02
LCO 3.03.02 T3.03.02-01 04C	LCO 3.03.02 T3.03.02-01 04C
LCO 3.03.02 T3.03.02-01 04D-01	LCO 3.03.02 T3.03.02-01 04G-01
LCO 3.03.02 T3.03.02-01 04D-03	LCO 3.03.02 T3.03.02-01 04G-03
LCO 3.03.02 T3.03.02-01 04E-01	LCO 3.03.02 T3.03.02-01 04H-01
LCO 3.03.02 T3.03.02-01 05B	LCO 3.03.02 T3.03.02-01 05B
LCO 3.03.02 T3.03.02-01 06B	LCO 3.03.02 T3.03.02-01 06C
LCO 3.03.02 T3.03.02-01 06D	LCO 3.03.02 T3.03.02-01 06F
N/A	SR 3.03.02.10 SR 3.03.02.10 NOTE

18 Rev. A	NUREG-1431, SR 3.3.2.11, is not being adopted in ITS. This SR applies to the P-4 Interlock. Point Beach ESFAS design does not include a P-4 interlock. Additionally, text added to the Bases description of SR 3.3.2.11, via TSTF-205, has not been incorporated into the ITS.

ITS:	NUREG:
B 3.03.02	B 3.03.02
N/A	SR 3.03.02.11 SR 3.03.02.11 NOTE

Justification For Deviations - NUREG-1431 Section 3.03.02

15-Mar-01

JFD Number	JFD Text
19 Rev. A	NUREG-1431 Reviewer's Note (a) in Table 3.3.2-1 is not being retained in ITS, resulting in the re-lettering of subsequent Notes.

ITS:	NUREG:
LCO 3.03.02 T3.03.02-01 01D	LCO 3.03.02 T3.03.02-01 01D
LCO 3.03.02 T3.03.02-01 01E	LCO 3.03.02 T3.03.02-01 01E-01

JFD Number	JFD Text
20 Rev. A	The "Trip Setpoint" column in Table 3.3.2-1 is being eliminated. The setpoint methodology at Point Beach utilizes Allowable Values derived from the analytical limits contained in the safety analysis. Where analytical limits do not exist for a given function, the Allowable Values are based on a plant specific evaluation of the functional requirement for the instrument channel.

ITS:	NUREG:
B 3.03.02	B 3.03.02
LCO 3.03.02 T3.03.02-01 01A	LCO 3.03.02 T3.03.02-01 01A
LCO 3.03.02 T3.03.02-01 01B	LCO 3.03.02 T3.03.02-01 01B
LCO 3.03.02 T3.03.02-01 01C	LCO 3.03.02 T3.03.02-01 01C
LCO 3.03.02 T3.03.02-01 01D	LCO 3.03.02 T3.03.02-01 01D
LCO 3.03.02 T3.03.02-01 01E	LCO 3.03.02 T3.03.02-01 01E-01
LCO 3.03.02 T3.03.02-01 02A	LCO 3.03.02 T3.03.02-01 02A
LCO 3.03.02 T3.03.02-01 02B	LCO 3.03.02 T3.03.02-01 02B
LCO 3.03.02 T3.03.02-01 02C	LCO 3.03.02 T3.03.02-01 02C-02
LCO 3.03.02 T3.03.02-01 03A	LCO 3.03.02 T3.03.02-01 03A-01
LCO 3.03.02 T3.03.02-01 03B	LCO 3.03.02 T3.03.02-01 03A-02
LCO 3.03.02 T3.03.02-01 04A	LCO 3.03.02 T3.03.02-01 04A
LCO 3.03.02 T3.03.02-01 04B	LCO 3.03.02 T3.03.02-01 04B
LCO 3.03.02 T3.03.02-01 04C	LCO 3.03.02 T3.03.02-01 04C
LCO 3.03.02 T3.03.02-01 04D-01	LCO 3.03.02 T3.03.02-01 04G-01
LCO 3.03.02 T3.03.02-01 04D-03	LCO 3.03.02 T3.03.02-01 04G-03
LCO 3.03.02 T3.03.02-01 04E-01	LCO 3.03.02 T3.03.02-01 04H-01
LCO 3.03.02 T3.03.02-01 05A	LCO 3.03.02 T3.03.02-01 05A
LCO 3.03.02 T3.03.02-01 05B	LCO 3.03.02 T3.03.02-01 05B
LCO 3.03.02 T3.03.02-01 06A	LCO 3.03.02 T3.03.02-01 06B
LCO 3.03.02 T3.03.02-01 06B	LCO 3.03.02 T3.03.02-01 06C
LCO 3.03.02 T3.03.02-01 06D	LCO 3.03.02 T3.03.02-01 06F
LCO 3.03.02 T3.03.02-01 08	LCO 3.03.02 T3.03.02-01 08B

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15-Mar-01

JFD Number	JFD Text	
21 Rev. E	Not used.	
	ITS:	**NUREG:**
	N/A	N/A
22 Rev. A	"Safety Injection - Containment Pressure - High 1" function has been renamed "Safety Injection - Containment Pressure - High" to reflect the nomenclature currently used at Point Beach.	
	ITS:	**NUREG:**
	B 3.03.02	B 3.03.02
	LCO 3.03.02 T3.03.02-01 01C	LCO 3.03.02 T3.03.02-01 01C
23 Rev. A	The Safety Injection - High Differential Pressure Between Steam Lines Function is not being adopted in the ITS. Point Beach design does not include this Function as a Safety Injection Actuation. Deletion of this Function also results in the reconfiguration of the Steam Line Pressure - Low SI presentation in Table 3.3.2-1.	
	ITS:	**NUREG:**
	B 3.03.02	B 3.03.02
	LCO 3.03.02 T3.03.02-01 01E	LCO 3.03.02 T3.03.02-01 01E-01
	N/A	LCO 3.03.02 T3.03.02-01 01E-02

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15-Mar-01

JFD Number	JFD Text
24 Rev. A	NUREG-1431, Safety Injection - High Steam Flow in Two Steam Lines Coincident with Tavg - Low Low Function and associated Notes and High Steam Flow in Two Steam Lines Coincident with Steam Line Pressure - Low Function and associated Notes are not being adopted in ITS. Point Beach design does not include these functions as Safety Injection Actuations. This change also results in the re-lettering of subsequent Notes in Table 3.3.2-1.

ITS:	NUREG:
B 3.03.02	B 3.03.02
LCO 3.03.02 T3.03.02-01 04A	LCO 3.03.02 T3.03.02-01 04A
LCO 3.03.02 T3.03.02-01 04B	LCO 3.03.02 T3.03.02-01 04B
LCO 3.03.02 T3.03.02-01 04C	LCO 3.03.02 T3.03.02-01 04C
LCO 3.03.02 T3.03.02-01 04D-01	LCO 3.03.02 T3.03.02-01 04G-01
LCO 3.03.02 T3.03.02-01 04D-03	LCO 3.03.02 T3.03.02-01 04G-03
LCO 3.03.02 T3.03.02-01 04E-01	LCO 3.03.02 T3.03.02-01 04H-01
LCO 3.03.02 T3.03.02-01 05A	LCO 3.03.02 T3.03.02-01 05A
LCO 3.03.02 T3.03.02-01 05B	LCO 3.03.02 T3.03.02-01 05B
N/A	LCO 3.03.02 T3.03.02-01 01F-01 LCO 3.03.02 T3.03.02-01 01F-02 LCO 3.03.02 T3.03.02-01 01G-01 LCO 3.03.02 T3.03.02-01 01G-02

25 Rev. A	The number of required channels for Manual Initiation of Containment Spray is changed to 2. Point Beach Containment Spray Manual Initiation consists of 2 pushbuttons. Depressing both pushbuttons simultaneously will initiate both trains of Containment Spray.

ITS:	NUREG:
LCO 3.03.02 T3.03.02-01 02A	LCO 3.03.02 T3.03.02-01 02A

26 Rev. A	NUREG-1431, Table 3.3.2-1, Function 2.c, Containment Spray - Containment Pressure, is adopted in ITS with the following changes: The "High -3 (High High)" option for two loop plants has been deleted; the "High -3 (Two Loop Plants)" has been renamed "High-High" to be consistent with the nomenclature used at Point Beach.

ITS:	NUREG:
B 3.03.02	B 3.03.02
LCO 3.03.02 T3.03.02-01 02C	LCO 3.03.02 T3.03.02-01 02C-02
N/A	LCO 3.03.02 T3.03.02-01 02C-01

JFD Number	JFD Text
27 Rev. A	NUREG-1431, Table 3.3.2-1, Function 3, Containment Isolation, is adopted in ITS with the following changes: Point Beach design does not provide for isolation of CCW, resulting in the deletion of Phase B Isolation; Point Beach does not use the term "Phase A" in describing its Containment Isolation Function, resulting in the re-arrangement of the presentation of this function in Table 3.3.2-1.

ITS:	NUREG:
B 3.03.02	B 3.03.02
LCO 3.03.02 T3.03.02-01 03A	LCO 3.03.02 T3.03.02-01 03A-01
LCO 3.03.02 T3.03.02-01 03B	LCO 3.03.02 T3.03.02-01 03A-02
LCO 3.03.02 T3.03.02-01 03C	LCO 3.03.02 T3.03.02-01 03A-03
N/A	LCO 3.03.02 T3.03.02-01 03B-01 LCO 3.03.02 T3.03.02-01 03B-02 LCO 3.03.02 T3.03.02-01 03B-03

28 Rev. E	Not used.

ITS:	NUREG:
N/A	N/A

29 Rev. A	Point Beach Steam Line Isolation - Manual Initiation design utilizes one switch for each steam line. Manual Initiation closes the MSIV for that loop. NUREG-1431, Table 3.3.2-1, Function 4.a, Required Channels, is modified to reflect the Point Beach design of 1 per loop.

ITS:	NUREG:
B 3.03.02	B 3.03.02
LCO 3.03.02 T3.03.02-01 04A	LCO 3.03.02 T3.03.02-01 04A

30 Rev. A	NUREG -1431, Table 3.3.2-1, "Steam Line Isolation - Containment Pressure - High 2" function has been renamed "Steam Line Isolation - Containment Pressure - High High" in the ITS, to reflect the nomenclature currently used at Point Beach.

ITS:	NUREG:
B 3.03.02	B 3.03.02
LCO 3.03.02 T3.03.02-01 04C	LCO 3.03.02 T3.03.02-01 04C

JFD Number | **JFD Text**

31
Rev. A

The following Steam Line Isolation Function and associated Notes of NUREG-1431, Table 3.3.2-1 are not being adopted in the ITS: Steam Line Pressure - Low; Steam Line Pressure - Negative Rate - High; High Steam Flow in Two Steam Lines Coincident with Tavg - Low Low; and High Steam Flow in Two Steam Lines Coincident with Steam Line Pressure - Low. Point Beach design does not include these functions as Steam Line Isolation actuations. This change also results in the re-numbering/re-lettering of subsequent functions and Notes in Table 3.3.2-1.

Additionally, modifications made to the Steam Line Pressure - Negative Rate - High Function and associated note, via TSTF-328, have not been incorporated.

ITS:	NUREG:
B 3.03.02	B 3.03.02
LCO 3.03.02 T3.03.02-01 04D-01	LCO 3.03.02 T3.03.02-01 04G-01
LCO 3.03.02 T3.03.02-01 04D-02	LCO 3.03.02 T3.03.02-01 04G-02
LCO 3.03.02 T3.03.02-01 04D-03	LCO 3.03.02 T3.03.02-01 04G-03
LCO 3.03.02 T3.03.02-01 04E-01	LCO 3.03.02 T3.03.02-01 04H-01
LCO 3.03.02 T3.03.02-01 04E-02	LCO 3.03.02 T3.03.02-01 04H-02
N/A	LCO 3.03.02 T3.03.02-01 04D-01 LCO 3.03.02 T3.03.02-01 04D-02 LCO 3.03.02 T3.03.02-01 04E-01 LCO 3.03.02 T3.03.02-01 04E-02 LCO 3.03.02 T3.03.02-01 04F-01 LCO 3.03.02 T3.03.02-01 04F-02

32
Rev. E

Not used.

ITS:	NUREG:
N/A	N/A

33
Rev. A

LCO 3.3.2, Table 3.3.2-1, Function 4.d, "Tavg - Low Low" coincidence signal is modified to "Tavg - Low", to be consistent with Point Beach nomenclature for this function.

ITS:	NUREG:
B 3.03.02	B 3.03.02
LCO 3.03.02 T3.03.02-01 04D-03	LCO 3.03.02 T3.03.02-01 04G-03

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15-Mar-01

JFD Number	JFD Text	
34 Rev. A	NUREG 1431, LCO 3.3.2, Table 3.3.2-1, Function 4.g, item 3, Coincident with Tavg - Low Low, Note (d) is not adopted in ITS. Note (d) modifies the MODE 3 applicability of Function 4.g, item 3, to stipulate the Function is not required to be OPERABLE below the P-12 interlock. Point Beach does not have a P-12 interlock, and therefore does not need this note.	
	ITS:	**NUREG:**
	B 3.03.02	B 3.03.02
	LCO 3.03.02 T3.03.02-01 04D-03	LCO 3.03.02 T3.03.02-01 04G-03
35 Rev. E	Not used.	
	ITS:	**NUREG:**
	N/A	N/A
36 Rev. A	ITS LCO 3.3.2, Table 3.3.2-1, Function 5, has been revised from "Turbine Trip and Feedwater Isolation" to "Feedwater Isolation." Point Beach ESFAS design does not directly provide for a Turbine Trip.	
	ITS:	**NUREG:**
	B 3.03.02	B 3.03.02
	LCO 3.03.02 T3.03.02-01 05A	LCO 3.03.02 T3.03.02-01 05A
37 Rev. A	ITS LCO 3.3.2, Table 3.3.2-1, Function 5.b, "Feedwater Isolation - SG Water Level - High High (P-14)" is modified to "Feedwater Isolation - SG Water Level High", to be consistent with Point Beach nomenclature for this function. Additionally, the Bases discussion of the Feedwater Isolation has been modified to reflect Point Beach design. On a SI signal, the MFW pump trip, causing the MFW pump discharge valves to close. On a Safety Injection signal or a SG Water Level-High signal in either SG, the MFRVs and the bypass regulating valves receive close signals.	
	ITS:	**NUREG:**
	B 3.03.02	B 3.03.02
	LCO 3.03.02 T3.03.02-01 05B	LCO 3.03.02 T3.03.02-01 05B

JFD Number	JFD Text
38 Rev. A	NUREG-1431, LCO 3.3.2, Table 3.3.2-1, Function 6.a, AFW - Automatic Actuation Logic and Actuation Relays (SSPS), is not retained in ITS. Point Beach ESFAS design does not utilize a Solid State Protection System. Additionally, the "Balance of Plant ESFAS" portion of the description for Function 6.b is deleted. This clarification is unnecessary in light of the aforementioned change. This change also results in the re-lettering of subsequent AFW initiation functions.

ITS:	NUREG:
B 3.03.02	B 3.03.02
LCO 3.03.02 T3.03.02-01 06A	LCO 3.03.02 T3.03.02-01 06B
LCO 3.03.02 T3.03.02-01 06B	LCO 3.03.02 T3.03.02-01 06C
LCO 3.03.02 T3.03.02-01 06C	LCO 3.03.02 T3.03.02-01 06D
N/A	LCO 3.03.02 T3.03.02-01 06A

39 Rev. A	ITS LCO 3.3.2, Table 3.3.2-1, Note (d) has been revised by the deletion of "MFIVs". Point Beach Feedwater Isolation design does not result in the direct isolation of the MFIVs. Therefore it is unnecessary to require the MFIVs to be closed to relax the OPERABILITY requirements of the Feedwater Isolation Functions.

ITS:	NUREG:
B 3.03.02	B 3.03.02

40 Rev. E	NUREG-1431, LCO 3.3.2, Table 3.3.2-1, Functions 6.e, 6.g and 6.h, AFW - Loss of Offsite Power, AFW - Trip of All MFW Pumps and AFW - AFW Pump Suction Transfer on Suction Pressure - Low, are not retained in ITS. Point Beach ESFAS design does not include these functions as AFW actuation signals. This change also results in the re-lettering of subsequent AFW initiation functions.

ITS:	NUREG:
B 3.03.02	B 3.03.02
LCO 3.03.02 T3.03.02-01 06D	LCO 3.03.02 T3.03.02-01 06F
N/A	LCO 3.03.02 COND J LCO 3.03.02 COND J RA J.1 LCO 3.03.02 COND J RA J.2 LCO 3.03.02 T3.03.02-01 06E LCO 3.03.02 T3.03.02-01 06G LCO 3.03.02 T3.03.02-01 06H

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JFD Number	JFD Text
41 Rev. A	ITS LCO 3.3.2, Table 3.3.2-1, Function 6.d, "Undervoltage Reactor Coolant Pump" has been renamed "Undervoltage Bus A01 & A02", to reflect the nomenclature currently used at Point Beach.

ITS:	NUREG:
B 3.03.02	B 3.03.02
LCO 3.03.02 T3.03.02-01 06D	LCO 3.03.02 T3.03.02-01 06F

JFD Number	JFD Text
42 Rev. A	NUREG-1431, LCO 3.3.2, Table 3.3.2-1, Function 7, Automatic Switchover to Containment Sump, is not being adopted in ITS. Point Beach design does not include this function.

ITS:	NUREG:
B 3.03.02	B 3.03.02
N/A	LCO 3.03.02 T3.03.02-01 07A LCO 3.03.02 T3.03.02-01 07B-01 LCO 3.03.02 T3.03.02-01 07B-02 LCO 3.03.02 T3.03.02-01 07C-01 LCO 3.03.02 T3.03.02-01 07C-02 LCO 3.03.02 T3.03.02-01 07C-03

JFD Number	JFD Text
43 Rev. A	NUREG-1431, LCO 3.3.2, Table 3.3.2-1, Function 8, ESFAS Interlocks, is not being adopted in ITS. Point Beach design does not include the P-4 and P-12 interlocks. Pressurizer Pressure interlock (without the P-11 designation) is used in the Point Beach design, in conjunction with a manual SI Block switch in the control room. When Pressurizer Pressure is < 1800 psig, the interlock permits the operators to manually block SI, allowing a normal cooldown and depressurization of the unit without actuation of SI. The block is automatically removed from the circuit when pressurizer pressure increases above 1800 psig.

ITS:	NUREG:
B 3.03.02	B 3.03.02
LCO 3.03.02 T3.03.02-01 08	LCO 3.03.02 T3.03.02-01 08B
LCO 3.03.02 T3.03.02-01 NOTE (a)	LCO 3.03.02 T3.03.02-01 NOTE (b)
N/A	LCO 3.03.02 T3.03.02-01 08A LCO 3.03.02 T3.03.02-01 08C

JFD Number	JFD Text
44 Rev. A	ITS LCO 3.3.2, Table 3.3.2-1, has been modified by the addition of Function 7, Containment Pressure Condensate Isolation (CPCI). CPCI trips the condensate pump and heater drain pumps on high containment pressure (indication of Main Steam Line Break inside containment). This function was added after the Point Beach evaluation of IE Bulletin 80-04 showed that a single failure of a MFRV to close on a SI signal could allow feedwater addition from condensate and heater drain pumps to the ruptured steam generator, leading to containment overpressure. The Condensate Isolation Function is required OPERABLE in MODES 1, 2 and 3 (except when all MFRVs and associated bypass valves are closed and de-activated.) The Function is not required in MODES 4, 5 and 6, because there is insufficient energy in the secondary side of the unit to have an accident.

ITS:	NUREG:
B 3.03.02	B 3.03.02
LCO 3.03.02 T3.03.02-01 07A	N/A
LCO 3.03.02 T3.03.02-01 07B	N/A

JFD Number	JFD Text
45 Rev. A	LCO 3.3.2 Bases Background discussion is modified to reflect Point Beach ESFAS design. The Point Beach ESFAS design does not utilize a Solid State Protection System, but rather uses a logic system of relays and contactors.

ITS:	NUREG:
B 3.03.02	B 3.03.02

JFD Number	JFD Text
46 Rev. A	LCO 3.3.2 Bases, Applicable Safety Analyses, LCO and Applicability discussion of functions initiated by the Safety Injection signal includes "Containment Purge Isolation." This function's nomenclature is modified to "Containment Ventilation Isolation" to reflect that used at Point Beach.

ITS:	NUREG:
B 3.03.02	B 3.03.02

JFD Number	JFD Text
47 Rev. A	LCO 3.3.2 Bases discussion of Steam Line Isolation - Containment Pressure - High High, is modified to reflect Point Beach design. At Point Beach this function is configured in a two-out-of-three channel logic. Therefore the statement regarding a forth channel for enhanced reliability has not been retained.

ITS:	NUREG:
B 3.03.02	B 3.03.02

Justification For Deviations - NUREG-1431 Section 3.03.02

15-Mar-01

JFD Number	JFD Text
48 Rev. A	LCO 3.3.2, Table 3.3.2-1, item # 3(c), Containment Isolation-SI, and LCO 3.3.2 Bases discussion of Manual SI Initiation is modified to reflect Point Beach design. Manual Initiation of SI at Point Beach does not result in initiation of Containment Isolation. The Point Beach design incorporates the philosophy that Containment Isolation should be a deliberate operator action because of the plant disruption caused by a Containment Isolation.

ITS:	NUREG:
B 3.03.02	B 3.03.02
LCO 3.03.02 T3.03.02-01 03C	LCO 3.03.02 T3.03.02-01 03A-03

JFD Number	JFD Text
49 Rev. A	LCO 3.3.2 Bases discussion of Containment Pressure sensing lines has been modified to reflect Point Beach design.

ITS:	NUREG:
B 3.03.02	B 3.03.02

JFD Number	JFD Text
50 Rev. A	LCO 3.3.2 Bases discussion of Pressurizer Pressure Control and protection function interactions is modified to reflect Point Beach design. Point Beach utilizes a two-out-of-three SI - Pressurizer Pressure-Low logic. The PORV interlock pressure settings are above normal operating pressure such that two independent PORV open signals are required. Therefore a single pressure channel failing high will not fail a PORV open and trigger a depressurization / SI event. Additionally, the signal that opens the pressurizer spray valves on increasing pressurizer pressure comes from the same pressure channels that initiate SI actuation (control signal is selectable from one of three channels.) If the selected channel were to fail High without operator intervention, one or both spray valves would fail open, causing the RCS to depressurize. An evaluation of this control/protection interaction was performed by Westinghouse. This evaluation concluded that an SI would not be required during a failed open spray valve event, because there would be no uncontrolled loss of RCS inventory and no need for boron injection to assure safe reactor shutdown (a reactor shutdown will still occur.) In addition, the RCS depressurization would be slow enough to be recognized by the operator and mitigated through manual action to close the spray valve(s) and energize the pressurizer heaters prior to reaching saturated conditions in the RCS, and manual actuation of SI would not be required. On this basis, the stuck open spray valve scenario does not represent a violation of the control/protection interaction criterion of IEEE 279, Section 4.7.

ITS:	NUREG:
B 3.03.02	B 3.03.02

Justification For Deviations - NUREG-1431 Section 3.03.02

15-Mar-01

JFD Number	JFD Text	
51 Rev. A	LCO 3.3.2 Bases discussion of Containment Spray - Manual Initiation is modified to reflect Point Beach design. Point Beach utilizes two pushbuttons to actuate Containment Spray. To avoid inadvertent actuation both pushbuttons are required to be depressed simultaneously to actuate spray. Depressing both pushbuttons actuates both trains of Containment Spray. As a result of this logic configuration, manual actuation of Containment Spray is dependent on the OPERABILITY of both pushbuttons. Furthermore, Containment Spray is "automatically" actuated by Containment Pressure-High High.	
	ITS:	**NUREG:**
	B 3.03.02	B 3.03.02
52 Rev. A	LCO 3.3.2 Bases discussion of Containment Isolation has been modified. Point Beach design only provides for the isolation of certain non-essential process lines between the containment and the environment.	
	ITS:	**NUREG:**
	B 3.03.02	B 3.03.02
53 Rev. A	LCO 3.3.2 Bases discussion of AFW - SG Water Level - Low Low logic has been modified to reflect Point Beach design. A SG Water Level - Low Low in either SG will cause both motor driven AFW pumps to start. The turbine driven AFW pump starts on SG Water Level - Low Low in both SGs.	
	ITS:	**NUREG:**
	B 3.03.02	B 3.03.02
54 Rev. A	LCO 3.3.2 Bases discussion of AFW - Undervoltage Bus A01 & A02 logic is modified to reflect Point Beach design and current licensing basis. The 4KV bus undervoltage actuation of the turbine driven AFW pump monitors voltage on each of the two independent buses and actuates AFW when low voltage occurs on both buses. The function logic is one-out-of-two-taken-twice to detect an undervoltage on both buses simultaneously in anticipation of losing both Main Feedwater pumps.	
	ITS:	**NUREG:**
	B 3.03.02	B 3.03.02
55 Rev. E	Not used.	
	ITS:	**NUREG:**
	N/A	N/A

Justification For Deviations - NUREG-1431 Section 3.03.02

15-Mar-01

JFD Number	JFD Text	
56 Rev. A	LCO 3.3.2 Bases discussion of Pressurizer Pressure SI Block is modified to reflect Point Beach design. The Pressurizer Pressure SI Block does not provide a block of the Main Steam Isolation Function at Point Beach.	
	ITS:	**NUREG:**
	B 3.03.02	B 3.03.02
57 Rev. E	Not used.	
	ITS:	**NUREG:**
	N/A	N/A
58 Rev. A	LCO 3.3.2 Bases include discussions concerning the physical location of transmitters which may be subject to adverse environmental conditions during accident conditions. The locations provided in NUREG-1431 have been modified to reflect the actual locations of these transmitters at Point Beach.	
	ITS:	**NUREG:**
	B 3.03.02	B 3.03.02
59 Rev. A	NUREG-1431. LCO 3.3.2, Table 3.3.2-1, item #4.g, Tavg-Low, Required Channels column specifies "[2] per loop", where [2] would be replaced by a plant specific number. Proposed ITS LOC 3.3.2, Table 3.3.2-1, item #4.d, Tavg-Low, requires "3" channels to be operable. Point Beach design incorporates a two-out-of-four logic configuration for each train, where two channels in each loop provide input to both trains of Steam Line Isolation. The accidents that this Function protects against cause reduction of Tavg in the entire primary system. Therefore, the provision of 3 operable channels ensures no single random failure disables the Tavg-Low Function.	
	ITS:	**NUREG:**
	B 3.03.02	B 3.03.02
	LCO 3.03.02 T3.03.02-01 04D-03	LCO 3.03.02 T3.03.02-01 04G-03
60 Rev. A	References in LCO 3.3.2 Bases to the "Reactor Trip System (RTS)" have been changed to "Reactor Protection System (RPS)", to reflect the nomenclature used at Point Beach.	
	ITS:	**NUREG:**
	B 3.03.02	B 3.03.02

Justification For Deviations - NUREG-1431 Section 3.03.02

15-Mar-01

JFD Number	JFD Text
61 Rev. A	LCO 3.3.2 Bases discussion of Allowable Values has been modified. With the exception of the Motor-Driven AFW pump start on SG Water Level-Low Low, no other primary ESFAS sensors located in harsh environments are required to meet environmental qualifications. A Validation Report of RPS/ESFAS sensors concluded that ESFAS actuation will occur before the transmitter signal is influenced by the environment, and therefore EQ is not required for these sensors to perform their protection functions.
	ITS: / **NUREG:**
	B 3.03.02 / B 3.03.02
62 Rev. A	LCO 3.3.2 Bases discussion of SI - Containment Pressure-High, has been modified. Point Beach design does not analyze for a Feed Line Break inside containment. Therefore SI actuation on Containment Pressure - High is not provided for the mitigation of this accident.
	ITS: / **NUREG:**
	B 3.03.02 / B 3.03.02
63 Rev. A	LCO 3.3.2 Bases discussion of SI - Steam Line Pressure - Low has been modified to reflect Point Beach design. Steam Line Pressure - Low provides a signal for control of the main steam atmospheric dump valves. However, a failure in a steam line pressure channel does not create a control failure that would result in a low steam line pressure SI event. Therefore, three operable channels on each steam line are sufficient to satisfy the protective requirements with a two-out-of-three logic on each steam line.
	ITS: / **NUREG:**
	B 3.03.02 / B 3.03.02
64 Rev. A	LCO 3.3.2 Bases discussion of AFW - SI has been modified to reflect Point Beach design. A SI actuation signal will cause both AFW motor-driven pumps to start. A SI actuation signal does not start the AFW turbine-driven pump.
	ITS: / **NUREG:**
	B 3.03.02 / B 3.03.02
65 Rev. A	NUREG-1431, LCO 3.3.2, Table 3.3.2-1, Function 1.e, Steam Line Pressure-Low Safety Injection, has been revised. The Note modifying the Applicability of this function will provide an exception during RCS hydrostatic testing. This is necessary because RCS hydrostatic testing is performed in MODE 3, when the steam lines are depressurized. Therefore, if the function was OPERABLE with Pressurizer Pressure > 1800 psig, a Safety Injection actuation signal would be generated.
	ITS: / **NUREG:**
	LCO 3.03.02 T3.03.02-01 01E / LCO 3.03.02 T3.03.02-01 01E-01 LCO 3.03.02 T3.03.02-01 01E-01
	LCO 3.03.02 T3.03.02-01 NOTE (b) / LCO 3.03.02 T3.03.02-01 NOTE (b)

Justification For Deviations - NUREG-1431 Section 3.03.02

15-Mar-01

JFD Number	JFD Text
66 Rev. E	LCO 3.3.2, Required Action F.1 has been revised by the deletion of "or train". The Table 3.3.2-1 function (P-4) pertaining to "trains", was not retained in ITS. Therefore Condition F is only entered for inoperabilities associated with "channels" of instrumentation.

ITS:	NUREG:
LCO 3.03.02 COND F	LCO 3.03.02 COND F
LCO 3.03.02 COND F RA F.1	LCO 3.03.02 COND F RA F.1

JFD Number	JFD Text
67 Rev. E	The Notes modifying NUREG-1431, Conditions C, D, E, G and I, have not been retained in ITS. The provision to allow bypassing the inoperable channel or train for 4 hours for surveillance testing is based on the analyses contained in WCAP-10271-P-A, Supplement 2. The SERs for WCAP-10271 required individual plants to confirm the applicability of the generic analysis of the WCAP. Point Beach has not confirmed the applicability of the generic analyses of WCA-10271, and therefore will not adopt these Notes. In addition, once the Notes modifying NUREG-1431, Conditions D and E are deleted, the Required Actions are duplicated between the Conditions. Therefore, Condition E has not been retained. Accordingly, ITS Table 3.3.2-1, Function 2.c, Containment Spray - Containment Pressure High High, has been updated to refer to Condition D instead of Condition E.

ITS:	NUREG:
B 3.03.02	B 3.03.02
LCO 3.03.02 T3.03.02-01 02C	LCO 3.03.02 T3.03.02-01 02C-02
N/A	LCO 3.03.02 COND C RA C.1 NOTE
	LCO 3.03.02 COND D RA D.1 NOTE
	LCO 3.03.02 COND E
	LCO 3.03.02 COND E RA E.1
	LCO 3.03.02 COND E RA E.1 NOTE
	LCO 3.03.02 COND E RA E.2.1
	LCO 3.03.02 COND E RA E.2.2
	LCO 3.03.02 COND G RA G.1 NOTE
	LCO 3.03.02 COND I RA I.1 NOTE

Justification For Deviations - NUREG-1431 Section 3.03.02

15-Mar-01

JFD Number	JFD Text
68 Rev. E	The NUREG-1431 Required Actions for an inoperable Manual Containment Spray initiation channel have been modified to require restoration of inoperable channel(s) in 1 hour, or be in MODE 3 in 7 hours and MODE 5 in 37 hours. This change is necessary due to PBNP design of the Manual Containment Spray initiation logic, which consists of two pushbuttons, both of which must be simultaneously depressed to actuate the two trains of Containment Spray. Therefore, one or both channels being inoperable results in a loss of function, requiring compensatory measures consistent with this condition. To provide these required actions, a new Condition E and associated Required Actions have been added.

ITS:	NUREG:
B 3.03.02	B 3.03.02
LCO 3.03.02 COND E	LCO 3.03.02 COND B
LCO 3.03.02 COND E RA E.1	LCO 3.03.02 COND B RA B.1
LCO 3.03.02 COND E RA E.2.1	LCO 3.03.02 COND B RA B.2.1
LCO 3.03.02 COND E RA E.2.2	LCO 3.03.02 COND B RA B.2.2

JFD Number	JFD Text
69 Rev. E	The Allowable Value associated with the High SG Water Level – Feedwater Isolation function has been replaced with a field setting. This field setting was developed outside of the setpoint methodology and have been provided by the NSSS supplier. No analytical limit or Allowable Value has been established for this function as it is not credited in the safety analysis for the mitigation of any accident. The High SG Water Level – Feedwater Isolation function provides backup FW Isolation for a reduction in feedwater enthalpy incident . Therefore, the field setting for this function being provided in Table 3.3.2-1does not imply that an analytical limit exists, or that this function is necessary to mitigate an analyzed accident.

ITS:	NUREG:
LCO 3.03.02 T3.03.02-01 05B	LCO 3.03.02 T3.03.02-01 05B
LCO 3.03.02 T3.03.02-01 Note (f)	N/A

JFD Number	JFD Text
70 Rev. E	The time allowed to place an inoperable channel in the tripped condition has been changed from 6 hours to 1 hour. The 6 hour completion time of NUREG-1431, Required Action D.1 is based upon the analysis contained in WCAP-10271-P-A, Supplement 2. The SERs for WCAP-10271 require individual plants to confirm the applicability of the generic analysis of the WCAP. Point Beach Nuclear Plant has not confirmed the applicability of the generic analysis of WCAP-10271 and therefore, will retain the Completion Time requirements of the current licensing basis. This change also results in the revision of the Completion Times of Required Actions D.2.1 and D.2.2, such that the assumptions for completion of these required actions remain valid.

ITS:	NUREG:
LCO 3.03.02 COND D RA D.1	LCO 3.03.02 COND D RA D.1
LCO 3.03.02 COND D RA D.2.1	LCO 3.03.02 COND D RA D.2.1
LCO 3.03.02 COND D RA D.2.2	LCO 3.03.02 COND D RA D.2.2

Justification For Deviations - NUREG-1431 Section 3.03.02

15-Mar-01

JFD Number	JFD Text
71 Rev. E	As a result of adopting the STS Required Number of Operable channels for the Undervoltage Bus A01 and A02 AFW Actuation, adoption of required actions for one inoperable channel is also necessary. Therefore, the STS actions for one inoperable Undervoltage Bus A01 and A02 AFW Actuation channel have been adopted with the following exception. The STS Required Actions require the inoperable channel to be placed in trip within 6 hours, as justified in WCAP-10271-P-A, Supplement 2. But, because Point Beach has not performed a plant specific evaluation to confirm the applicability of the generic analysis contained in WCAP-10271, this justification cannot be used. However, the proposed ITS Required Actions will require the inoperable channel be placed in trip in 6 hours, based on the time required to call in maintenance personnel (who may not be on site during back shifts, weekends and holidays) to place the channel in trip. Therefore, the 6 hour Completion Time of STS Required Action has been retained in ITS, but with a different justification, as discussed in the bases. **ITS:** B 3.03.02 **NUREG:** B 3.03.02
72 Rev. E	The requirement to perform a Master Relay Test on the Steam Line Isolation - Automatic Actuation and Actuation Relays has not been retained in ITS. The logic associated with the Steam Line Isolation function is comprised of two trains, with each train providing output to each MSIV. An output from a train to an MSIV is comprised of one contact from one relay. Therefore, there is no master / slave relay configuration. The requirement to perform a Slave Relay Test on the Steam Line Isolation - Automatic Actuation Logic and Actuation Relays will ensure the outputs from each train are verified operable. **ITS:** B 3.03.02 LCO 3.03.02 T3.03.02-01 04B **NUREG:** B 3.03.02 LCO 3.03.02 T3.03.02-01 04B
73 Rev. E	The requirement to perform an Actuation Logic Test on the Containment Isolation (CI) – Automatic Actuation and Actuation Relays has not been retained in ITS. The configuration of the CI logic at Point Beach includes inputs from Safety Injection (SI) actuation (excluding manual SI) and Manual CI actuation. The contacts in the CI logic that come from the SI actuation are tested as part of the SI Automatic Actuation Logic Slave Relay Test surveillance requirement. The contacts in the CI logic from the Manual CI pushbuttons are tested as part of the Manual CI TADOT surveillance requirement. Additionally, the master and slave relays which actuate to effect the containment isolation on a SI actuation or Manual CI signal are tested via the Master and Slave Relay surveillance requirements. Therefore, all of the components of the CI logic are tested and an Actuation Logic Test is not required. **ITS:** LCO 3.03.02 T3.03.02-01 03B **NUREG:** LCO 3.03.02 T3.03.02-01 03A-02

3.3 INSTRUMENTATION

3.3.2 Engineered Safety Feature Actuation System (ESFAS) Instrumentation

LCO 3.3.2 The ESFAS instrumentation for each Function in Table 3.3.2-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.2-1.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each Function.

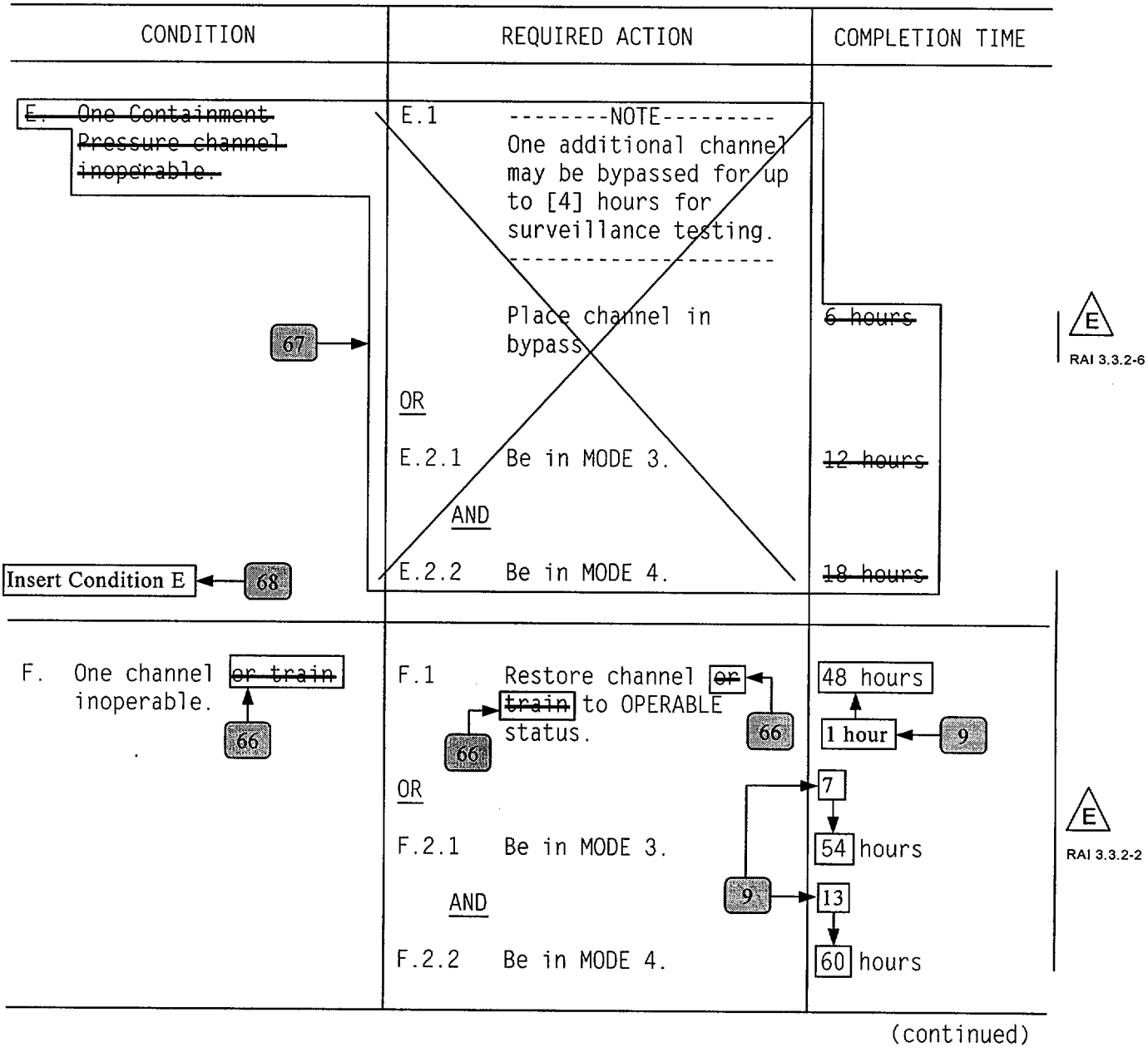
CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one or more required channels or trains inoperable.	A.1 Enter the Condition referenced in Table 3.3.2-1 for the channel(s) or train(s).	Immediately
B. One channel ~~or train~~ (3) inoperable.	B.1 Restore channel ~~or~~ ~~train~~ to OPERABLE status. (3) (3) OR B.2.1 Be in MODE 3. AND B.2.2 Be in MODE 5.	48 hours 54 hours 84 hours

(E) RAI 3.3.2-2

(continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. One train inoperable.	C.1	~~--------NOTE-------- One train may be bypassed for up to [4] hours for surveillance testing provided the other train is OPERABLE. ----------~~ 67	E RAI 3.3.2-6
		Restore train to OPERABLE status.	6 hours
	OR		
	C.2.1	Be in MODE 3.	12 hours
	AND		
	C.2.2	Be in MODE 5.	42 hours
D. One channel inoperable.	D.1	~~--------NOTE-------- The inoperable channel may be bypassed for up to [4] hours for surveillance testing of other channels. ----------~~ 67	E RAI 3.3.2-5 RAI 3.3.2-6
		Place channel in trip.	6 hours 1 hour 70
	OR		
	D.2.1	Be in MODE 3.	12 hours 7 13 70
	AND		
	D.2.2	Be in MODE 4.	18 hours

(continued)


CONDITION
REQUIRED ACTION
COMPLETION TIME
E. One Containment Pressure channel inoperable.
E.1 --------NOTE--------
One additional channel may be bypassed for up to [4] hours for surveillance testing.
Place channel in bypass
6 hours
67
OR
E.2.1 Be in MODE 3.
12 hours
AND
E.2.2 Be in MODE 4.
18 hours
Insert Condition E
68
E
RAI 3.3.2-6
F. One channel or train inoperable.
66
F.1 Restore channel or train to OPERABLE status.
66
66
48 hours
1 hour
9
OR
7
F.2.1 Be in MODE 3.
54 hours
AND
9
13
F.2.2 Be in MODE 4.
60 hours
E
RAI 3.3.2-2

(continued)

Insert E

E.	One or both channel(s) inoperable.	E.1	Restore channel(s) to OPERABLE status.	1 hour
		OR		
		E.2.1	Be in MODE 3.	7 hours
		AND		
		E.2.2	Be in MODE 5.	37 hours

E
RAI 3.3.2-2

CONDITION	REQUIRED ACTION		COMPLETION TIME
G. One train inoperable.	G.1	--------NOTE-------- One train may be bypassed for up to [4] hours for surveillance testing provided the other train is OPERABLE. ----------	67
		Restore train to OPERABLE status.	6 hours
	OR		
	G.2.1	Be in MODE 3.	12 hours
	AND		
	G.2.2	Be in MODE 4.	18 hours
~~H. One train inoperable.~~	H.1	--------NOTE-------- One train may be bypassed for up to [4] hours for surveillance testing provided the other train is OPERABLE. ----------	10
		Restore train to OPERABLE status.	~~6 hours~~
	OR		
	H.2	Be in MODE 3.	~~12 hours~~

E
RAI 3.3.2-2
RAI 3.3.2-6

(continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
I. One channel inoperable.	I.1 ~~--------NOTE--------~~ ~~The inoperable channel may be bypassed for up to [4] hours for surveillance testing of other channels.~~ ~~----------~~	
		Place channel in trip. 6 hours
	OR	
	I.2	Be in MODE 3. 12 hours
~~J. One Main Feedwater Pumps trip channel inoperable.~~	~~J.1~~	~~Restore channel to OPERABLE status.~~ ~~48 hours~~
	~~OR~~	
	~~J.2~~	~~Be in MODE 3.~~ ~~54 hours~~
~~K. One channel inoperable.~~	~~K.1~~ ~~--------NOTE--------~~ ~~One additional channel may be bypassed for up to [4] hours for surveillance testing.~~ ~~----------~~	
	~~Place channel in bypass.~~	~~6 hours~~
	~~OR~~	

RAI 3.3.2-2
RAI 3.3.2-6

Errata #160

(continued)

Table 3.3.2-1 (page 1 of 8)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	TRIP SETPOINT(a)
1. Safety Injection						
a. Manual Initiation	1,2,3,4	2	B	SR 3.3.2.8	NA	NA
b. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	C	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA	NA
c. Containment Pressure–High	1,2,3	3	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 ~~SR 3.3.2.10~~	≤ [3.86] psig	≤ [3.6] psig
d. Pressurizer Pressure–Low	1,2,3(b)	[3]	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 ~~SR 3.3.2.10~~	≥ [1839] psig	≥ [1850] psig
e. Steam Line Pressure						
~~(1)~~ Low	1,2,3[(b)]	3 per steam line	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 ~~SR 3.3.2.10~~	≥ [635](c) psig	≥ [675](c) psig
~~(2) High Differential Pressure Between Steam Lines~~	~~1,2,3~~	~~3 per steam line~~	~~D~~	~~[SR 3.3.2.1]~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~≤ [106] psig~~	[97] psig
~~f. High Steam Flow in Two Steam Lines~~	~~1,2,3(d)~~	~~2 per steam line~~	~~D~~	~~SR 3.3.2.1~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~(e)~~	(f)
~~Coincident with T_{avg} Low Low~~	~~1,2,3(d)~~	~~1 per loop~~	~~D~~	~~SR 3.3.2.1~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~≥ [550.6]°F~~	≥ [553]°F

(continued)

~~(a) Reviewer's Note: Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.~~

(b) Above the P-11 (Pressurizer Pressure) interlock.

(c) Time constants used in the lead/lag controller are $t_1 \geq$ [50] seconds and $t_2 \leq$ [5] seconds.

~~(d) Above the P-12 (T_{avg} Low Low) interlock.~~

~~(e) Less than or equal to a function defined as ΔP corresponding to [44]% full steam flow below [20]% load, and ΔP increasing linearly from [44]% full steam flow at [20]% load to [114]% full steam flow at [100]% load, and ΔP corresponding to [114]% full steam flow above 100% load.~~

~~(f) Less than or equal to a function defined as ΔP corresponding to [40]% full steam flow between [0]% and [20]% load and then a ΔP increasing linearly from [40]% steam flow at [20]% load to [110]% full steam flow at [100]% load.~~

(b) Pressurizer Pressure > 1800 psig, except during Reactor Coolant System hydrostatic testing.

RAI 3.3.2-2
RAI 3.3.2-10

Table 3.3.2-1 (page 2 of 8)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	TRIP SETPOINT[a]
~~1. Safety Injection (continued)~~						
~~g. High Steam Flow in Two Steam Lines~~	~~1,2,3[d]~~	~~2 per steam line~~	~~D~~	~~SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10~~	~~(e)~~	(f)
~~Coincident with Steam Line Pressure Low~~	~~1,2,3[d]~~	~~1 per steam line~~	~~D~~	~~SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10~~	~~≥ [636][e] psig~~	≥ [675] psig
2. Containment Spray						
a. Manual Initiation	1,2,3,4	2 per train, 2 trains	B	SR 3.3.2.8	NA	NA
b. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	C	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA	NA
c. Containment Pressure						
~~High 3 (High High)~~	~~1,2,3~~	~~4~~	~~E~~	~~SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10~~	~~≤ [12.31] psig~~	≤ [12.05] psig
High-3 (Two Loop Plants)	1,2,3	[3] sets of [2]	E	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ [12.31] psig	≤ [12.05] psig
		2 sets of 3				

(continued)

~~(a) Reviewer's Note: Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.~~

~~(c) Time constants used in the lead/lag controller are $t_1 \geq$ [50] seconds and $t_2 \leq$ [5] seconds.~~

~~(d) Above the P-12 (T_{avg} Low Low) interlock.~~

~~(e) Less than or equal to a function defined as ΔP corresponding to [44]% full steam flow below [20]% load, and ΔP increasing linearly from [44]% full steam flow at [20]% load to [114]% full steam flow at [100]% load, and ΔP corresponding to [114]% full steam flow above 100% load.~~

~~(f) Less than or equal to a function defined as ΔP corresponding to [40]% full steam flow between [0]% and [20]% load and then a ΔP increasing linearly from [40]% steam flow at [20]% load to [110]% full steam flow at [100]% load.~~

RAI 3.3.2-2
RAI 3.3.2-6
RAI 3.3.2-10
Errata #161

Table 3.3.2-1 (page 3 of 8)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	TRIP SETPOINT[a]
3. Containment Isolation						
a. ~~Phase A Isolation~~						
(a) (1) Manual Initiation	1,2,3,4	2	B	SR 3.3.2.8	NA	NA
(b) (2) Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	C	~~SR 3.3.2.2~~ SR 3.3.2.4 SR 3.3.2.6	NA	NA
(c) (3) Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
b. ~~Phase B Isolation~~						
~~(1) Manual Initiation~~	~~1,2,3,4~~	~~2 per train, 2 trains~~	~~B~~	~~SR 3.3.2.8~~	~~NA~~	NA
~~(2) Automatic Actuation Logic and Actuation Relays~~	~~1,2,3,4~~	~~2 trains~~	~~C~~	~~SR 3.3.2.2~~ ~~SR 3.3.2.4~~ ~~SR 3.3.2.6~~	~~NA~~	NA
~~(3) Containment Pressure~~						
~~High 3 (High High)~~	~~1,2,3~~	~~[4]~~	~~E~~	~~SR 3.3.2.1~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~≤ [12.31] psig~~	≤ [12.09] psig
4. Steam Line Isolation						
a. Manual Initiation	1,2(i),3(i)	2	F	SR 3.3.2.8	NA	NA
b. Automatic Actuation Logic and Actuation Relays	1,2(i),3(i)	2 trains	G	~~SR 3.3.2.2~~ ~~SR 3.3.2.4~~ SR 3.3.2.6	NA	NA

(continued)

~~(a) Reviewer's Note: Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.~~

(i) Except when all MSIVs are closed and [de-activated].

RAI 3.3.2-2
RAI 3.3.2-10
Errata #111

RAI 3.3.2-2
RAI 3.3.2-10
Errata #150

Table 3.3.2-1 (page 4 of 8)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	TRIP SETPOINT(d)
4. Steam Line Isolation (continued)						
c. Containment Pressure–High	1,2(i), 3(i) (d)	[4]	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ [6.61] psig	≤ [6.35] psig
~~d. Steam Line Pressure~~						
~~(1) Low~~	~~1,2(i), 3(b)(i)~~	~~3 per steam line~~	~~D~~	~~SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10~~	~~≥ [635](c) psig~~	≥ [675](c) psig
~~(2) Negative Rate–High~~	~~3(g)(i)~~	~~3 per steam line~~	~~D~~	~~SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10~~	~~≤ [121.6](h) psi/sec~~	≤ [110](h) psi/sec
~~e. High Steam Flow in Two Steam Lines~~	~~1,2(i), 3(i)~~	~~2 per steam line~~	~~D~~	~~SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10~~	~~(e)~~	(f)
~~Coincident with T_{avg} Low-Low~~	~~1,2(i), 3(d)(i)~~	~~1 per loop~~	~~D~~	~~SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10~~	~~≥ [550.6]°F~~	≥ [553]°F

(continued)

~~(a) Reviewer's Note: Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.~~
~~(b) Above the P-11 (Pressurizer Pressure) interlock.~~
~~(c) Time constants used in the lead/lag controller are $t_1 \geq$ [50] seconds and $t_2 \leq$ [5] seconds.~~
~~(d) Above the P-12 (T_{avg} Low-Low) interlock.~~
~~(e) Less than or equal to a function defined as ΔP corresponding to [44]% full steam flow below [20]% load, ΔP increasing linearly from [44]% full steam flow at [20]% load to [114]% full steam flow at [100]% load, and ΔP corresponding to [114]% full steam flow above 100% load.~~
~~(f) Less than or equal to a function defined as ΔP corresponding to [40]% full steam flow between [0]% and [20]% load and then a ΔP increasing linearly from [40]% steam flow at [20]% load to [110]% full steam flow at [100]% load.~~
~~(g) Below the P-11 (Pressurizer Pressure) interlock.~~
~~(h) Time constant utilized in the rate/lag controller is $\leq$ [50] seconds.~~
(i) Except when all MSIVs are closed and [de-activated]

Table 3.3.2-1 (page 5 of 8)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	TRIP SETPOINT(a)
4. Steam Line Isolation (continued)					≤ ΔP corresponding to 0.66x10^6 lb/hr at 1005 psig	
~~f. High Steam Flow in Two Steam Lines~~	~~1,2(i), 3(i)~~	~~2 per steam line~~	~~D~~	~~SR 3.3.2.1~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~(e)~~	(f)
~~Coincident with Steam Line Pressure Low~~	~~1,2,(i) 3(i)~~	~~1 per steam line~~	~~D~~	~~SR 3.3.2.1~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~≥ [635](c) psig~~	≥ [675](c) psig
g. High Steam Flow	1,2(i), 3(i)	2 per steam line	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ [25]% of full steam flow at no load steam pressure	≤ [ ] full steam flow at no load steam pressure
Coincident with Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
and						
Coincident with T_{avg}-Low ~~Low~~	1,2(i), 3(i)	[2] per loop	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ [550.6]°F	≥ [553]°F
h. High High Steam Flow	1,2(i), 3(i)	2 per steam line	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ [130]% of full steam flow at full load steam pressure	≤ [ ] of full steam flow at full load steam pressure
Coincident with Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					

(continued)

(a) ~~Reviewer's Note: Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.~~

(d) ~~Above the P-12 (T_{avg} Low Low) interlock.~~

(i) Except when all MSIVs are closed and [de-activated]

RAI 3.3.2-2
RAI 3.3.2-10

Table 3.3.2-1 (page 6 of 8)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	TRIP SETPOINT(a)
5. ~~Turbine Trip and~~ Feedwater Isolation						
a. Automatic Actuation Logic and Actuation Relays	1,2 [3]	2 trains	H [G]	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA	NA
b. SG Water Level–High ~~High (P-14)~~	1,2 [3]	[3] per SG	I [D]	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 ~~SR 3.3.2.10~~	≤ [84.2]%	≤ [82.4]%
c. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
6. Auxiliary Feedwater						
~~a. Automatic Actuation Logic and Actuation Relays (Solid State Protection System)~~	~~1,2,3~~	~~2 trains~~	~~G~~	~~SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6~~	~~NA~~	NA
b. Automatic Actuation Logic and Actuation Relays ~~(Balance of Plant ESFAS)~~	1,2,3	2 trains	G	SR 3.3.2.3 SR 3.3.2.2	NA	NA
c. SG Water Level–Low Low	1,2,3	[3] per SG	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 ~~SR 3.3.2.10~~	≥ [30.4]%	≥ [32.2]%

(continued)

~~(a) Reviewer's Note: Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.~~

(j) Except when all ~~MFIVs,~~ MFRVs, [and associated bypass valves] are closed and [de-activated] ~~[or isolated by a closed manual valve]~~

(f) Field setting of ≤ 78% of span (nominal).

RAI 3.3.2-2
RAI 3.3.2-3
RAI 3.3.2-10
RAI 3.3.2-3

Table 3.3.2-1 (page 7 of 8)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	TRIP SETPOINT[a]
6. Auxiliary Feedwater (continued)						
d. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
e. Loss of Offsite Power	1,2,3	[3] per bus	F	SR 3.3.2.7 SR 3.3.2.9 SR 3.3.2.10	≥ [2912] V with ≤ 0.8 sec time delay	≥ [2975] V with ≤ 0.8 sec time delay
f. Undervoltage Reactor Coolant Pump Bus A01&A02	1,2	[3] per bus	I	SR 3.3.2.7 SR 3.3.2.9 SR 3.3.2.10	≥ [69]% bus voltage 3120	≥ [70]% bus voltage
g. Trip of all Main Feedwater Pumps	1,2	[2] per pump	J	SR 3.3.2.8 SR 3.3.2.9 SR 3.3.2.10	≥ [ ] psig	≥ [ ] psig
h. Auxiliary Feedwater Pump Suction Transfer on Suction Pressure Low	1,2,3	[2]	F	SR 3.3.2.1 SR 3.3.2.7 SR 3.3.2.9	≥ [20.63] [psia]	≥ [ ] [psia]
7. Automatic Switchover to Containment Sump						
a. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	G	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA	NA
b. Refueling Water Storage Tank (RWST) Level Low Low	1,2,3,4	4	K	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ [16]% and ≤ [ ]%	≥ [ ] and ≤ [ ]
Coincident with Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					

(continued)

(a) Reviewer's Note: Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.

E RAI 3.3.2-2 Errata #160

Table 3.3.2-1 (page 8 of 8)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	TRIP SETPOINT(a)
~~7. Automatic Switchover to Containment Sump (continued)~~						
~~c. RWST Level Low Low~~	~~1,2,3,4~~	~~4~~	~~K~~	~~SR 3.3.2.1~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~≥ [15]%~~	≥ [18]%
~~Coincident with Safety Injection~~	~~Refer to Function 1 (Safety Injection) for all initiation functions and requirements.~~					
~~and~~						
~~Coincident with Containment Sump Level High~~	~~1,2,3,4~~	~~4~~	~~K~~	~~SR 3.3.2.1~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~≥ [30] in. above el. [703] ft~~	≥ [ ] in. above el. [ ] ft
8. ESFAS Interlocks						
~~a. Reactor Trip, P-4~~	~~1,2,3~~	~~1 per train, 2 trains~~	~~F~~	~~SR 3.3.2.11~~	~~NA~~	NA
~~b.~~ Pressurizer Pressure~~, P-11~~	1,2,3	3	L	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9	≤ [1996] psig	≤ [ ] psig
~~c. T_{avg} Low Low, P-12~~	~~1,2,3~~	~~[1] per loop~~	~~L~~	~~SR 3.3.2.1~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~	~~≥ [550.6]°F~~	≥ [553]°F

~~(a) Reviewer's Note: Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.~~

(e) Except when all MFRVs and associated bypass valves are closed and de-activated.

7. Condensate Isolation						
a. Containment Pressure-High	1,2(e),3(e)	3	D	SR 3.3.2.1 SR 3.3.2.3 SR 3.3.2.8	≤ 6 psig	
b. Automatic Actuation Logic and Actuation Relays	1,2(e),3(e)	2 trains	G	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.5	NA	

RAI 3.3.2-10
RAI 3.3.2-2
RAI 3.3.2-10

BASES

BACKGROUND

Signal Processing Equipment (continued)

actuation. Again, a single failure will neither cause nor prevent the protection function actuation.

These requirements are described in IEEE -279-1971 (Ref. 4). ~~The actual number of channels required for each unit parameter is specified in Reference 2.~~

~~Trip Setpoints and~~ Allowable Values

~~The Trip Setpoints are the nominal values at which the bistables are set. Any bistable is considered to be properly adjusted when the "as left" value is within the band for CHANNEL CALIBRATION accuracy.~~

~~The Trip Setpoints used in the bistables are based on the analytical limits stated in Reference 2. The selection of these Trip Setpoints is such that adequate protection is provided when all sensor and processing time delays are taken into account.~~ To allow for calibration tolerances, instrumentation uncertainties, instrument drift, ~~and severe environment errors for those ESFAS channels that must function in harsh environments as defined by 10 CFR 50.49 (Ref. 5)~~, the ~~Trip Setpoints and~~ Allowable Values specified in Table 3.3.2-1 in the accompanying LCO are conservatively adjusted with respect to the analytical limits. A detailed description of the methodology used to calculate the ~~Trip Setpoints~~ including their explicit uncertainties, is provided in the ~~"RTS/ESFAS Setpoint Methodology Study" (Ref. 6)~~. The actual nominal Trip Setpoint entered into the bistable is more conservative than that specified by the Allowable Value to account for changes in random measurement errors detectable by a COT. ~~One example of such a change in measurement error is drift during the surveillance interval.~~ If the measured setpoint does not exceed the Allowable Value, the bistable is considered OPERABLE.

Setpoints in accordance with the Allowable Value ensure that the consequences of Design Basis Accidents (DBAs) will be acceptable, providing the unit is operated from within the LCOs at the onset of the DBA and the equipment functions as designed.

BASES

BACKGROUND 20 ~~Trip Setpoints and~~ Allowable Values (continued)

Each channel can be tested on line to verify that the signal processing equipment and setpoint accuracy is within the specified allowance requirements ~~of Reference 2~~. 6 Once a designated channel is taken out of service for testing, a simulated signal is injected in place of the field instrument signal. The process equipment for the channel in test is then tested, verified, and calibrated. SRs for the channels are specified in the SR section.

20 The ~~Trip Setpoints and~~ Allowable Values listed in Table 3.3.2-1 are based on the methodology described in 6 4 Reference 6, which incorporates all of the known uncertainties applicable for each channel. The magnitudes of these uncertainties are factored into the determination of 20 Allowable Value each Trip Setpoint. All field sensors and signal processing equipment for these channels are assumed to operate within the allowances of these uncertainty magnitudes.

E RAI 3.3.2-1

45 Relay Logic Racks

Solid State Protection System

45 Relay Logic Racks

The SSPS equipment is used for the decision logic processing of outputs from the signal processing equipment bistables. To meet the redundancy requirements, two trains of SSPS, each performing the same functions, are provided. ~~If one train is taken out of service for maintenance or test purposes, the second train will provide ESF actuation for the unit. If both trains are taken out of service or placed in test, a reactor trip will result. Each train is packaged in its own cabinet for physical and electrical separation to satisfy separation and independence requirements.~~

45 Relay Logic Racks

The SSPS performs the decision logic for most ESF equipment actuation; generates the electrical output signals that initiate the required actuation; and provides the status, permissive, and annunciator output signals to the main control room of the unit.

The bistable outputs from the signal processing equipment are sensed by the SSPS equipment and combined into logic matrices that represent combinations indicative of various

BASES

APPLICABLE SAFETY ANALYSES, LCO, AND APPLICABILITY

Each of the analyzed accidents can be detected by one or more ESFAS Functions. One of the ESFAS Functions is the primary actuation signal for that accident. An ESFAS Function may be the primary a ctuation signal for more than one type of accident. An ESFAS Function may also be a secondary, or backup, actuation signal for one or more other accidents. For example, Pressurizer Pressure -Low is a primary actuation signal for small loss of coolant accidents (LOCAs) and a backup actuation signal for steam line breaks (SLBs) outside containment. Functions such as manual initiation, not specifically credited in the accident safety analysis, are qualitatively credited in the safety analysis and the NRC staff approved licensing basis for the unit. These Functions may provide protection for conditions that do not require dynamic transient analysis to demonstrate Function performance. These Functions may also serve as backups to Functions that were credited in the accident analysis (Ref. 3). 1 6

E Errata #162

The LCO requires all instrumentation performing an ESFAS Function to be OPERABLE. Failure of any instrument renders the affected channel(s) inoperable and reduces the reliability of the affected Functions.

The LCO generally requires OPERABILITY of four or three channels in each instrumentation function and two channels in each logic ~~and manual initiation~~ function. The two-out-of-three and the two-out-of-four configurations a llow one channel to be tripped during maintenance or testing without causing an ESFAS initiation. Two logic ~~or manual initiation~~ channels are required to ensure no single random failure disables the ESFAS.

21 21 21

The required channels of ESFAS instrumentation provide unit protection in the event of any of the analyzed accidents. ESFAS protection functions are as follows:

1. Safety Injection

Safety Injection (SI) provides two primary functions:

1. Primary side water addition to ensure maintenance or recovery of reactor vessel water level (coverage of the active fuel for heat removal, clad integrity, and for limiting peak clad temperature to < 2200°F); and

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

1. Safety Injection (continued)

42 ~~• Enabling ECCS suction from the refueling water storage tank (RWST) switchover on low low RWST level to ensure continued cooling via use of the containment sump.~~

a. Safety Injection – Manual Initiation

E RAI 3.3.2-2

The LCO requires one channel per train to be OPERABLE. The operator can initiate SI at any time by using either of two switches in the control room. This action will cause actuation of all components in the same manner as any of the automatic actuation signals.

48 with the exception of Containment Isolation

The LCO for the Manual Initiation Function ensures the proper amount of redundancy is maintained in the manual ESFAS actuation circuitry to ensure the operator has manual ESFAS initiation capability.

E RAI 3.3.2-2

Each channel consists of one push button and the interconnecting wiring to the actuation logic cabinet. Each push button actuates both trains. This configuration does not allow testing at power.

b. Safety Injection – Automatic Actuation Logic and Actuation Relays

This LCO requires two trains to be OPERABLE. Actuation logic consists of all circuitry housed within the actuation subsystems, including the initiating relay contacts responsible for actuating the ESF equipment.

Manual and automatic initiation of SI must be OPERABLE in MODES 1, 2, and 3. In these MODES, there is sufficient energy in the primary and secondary systems to warrant automatic initiation of ESF systems. Manual Initiation is also required in MODE 4 even though automatic actuation is not required. In this MODE, adequate time is available to manually actuate required components in the event of a DBA, but

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

The LCO requires two channels to be OPERABLE. A channel consists of one pushbutton and two sets of contacts, with one set of contacts in each train.

11

27

a. Containment Isolation ~~– Phase A Isolation~~ 27

Containment

(1) Phase A Isolation – Manual Initiation

Manual ~~Phase A~~ Containment Isolation is actuated by either of two switches in the control room. Either switch actuates both trains. Note that manual initiation of ~~Phase A~~ Containment Isolation also actuates Containment Purge Isolation.

E RAI 3.3.2-2

46 Ventilation

27 Containment

(2) Phase A Isolation – Automatic Actuation Logic and Actuation Relays

Automatic Actuation Logic and Actuation Relays consist of the same features and operate in the same manner as described for ESFAS Function 1.b.

27 Manual and automatic initiation of ~~Phase A~~ Containment Isolation must be OPERABLE in MODES 1, 2, and 3, when there is a potential for an accident to occur. Manual initiation is also required in MODE 4 even though automatic actuation is not required. In this MODE, adequate time is available to manually actuate required components in the event of a DBA, but because of the large number of components

27 actuated on a ~~Phase A~~ Containment Isolation, actuation is simplified by the use of the manual actuation push buttons. Automatic actuation logic and actuation relays must be OPERABLE in MODE 4 to support system level manual initiation. In MODES 5 and 6, there is insufficient energy in the primary or secondary systems to pressurize the containment to require ~~Phase A~~ Containment Isolation. There also is adequate time for the operator to evaluate unit conditions and manually actuate individual isolation valves in response to abnormal or accident conditions.

Containment

(3) Phase A Isolation – Safety Injection

27 ~~Phase A~~ Containment Isolation is also initiated by all Functions that initiate SI. The ~~Phase A~~ Containment Isolation

60 (except Manual SI initiation)

27

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

b. Steam Line Isolation – Automatic Actuation Logic and Actuation Relays

~~Automatic actuation logic and actuation relays consist of the same features and operate in the same manner as described for ESFAS Function 1.b.~~

The LCO requires two trains to be OPERABLE. Actuation logic consists of two trains, with each train providing output to each MSIV through individual relays.

72

Manual and automatic initiation of steam line isolation must be OPERABLE in MODES 1, 2, and 3 when there is sufficient energy in the RCS and SGs to have an SLB or other accident. This could result in the release of significant quantities of energy and cause a cooldown of the primary system. The Steam Line Isolation Function is required in MODES 2 and 3 unless all MSIVs are closed and [de-activated]. In MODES 4, 5, and 6, there is insufficient energy in the RCS and SGs to experience an SLB or other accident releasing significant quantities of energy.

de-activated

6

E Errata #150

30 High

c. Steam Line Isolation – Containment Pressure – High 2

This Function actuates closure of the MSIVs in the event of a LOCA or an SLB inside containment to maintain at least one unfaulted SG as a heat sink for the reactor, and to limit the mass and energy release to containment. The transmitters ~~(d/p cells)~~ are located outside containment with the sensing line (high pressure side of the transmitter) located inside containment.

7

49 lines passing through containment penetrations to sense the containment atmosphere in three different locations

Containment Pressure – High 2 provides no input to any control functions. Thus, three OPERABLE channels are sufficient to satisfy protective requirements with two-out-of-three logic.

30 High

~~However, for enhanced reliability, this Function was designed with four channels and a two-out-of-four logic.~~

47

The transmitters and electronics are located outside of containment. Thus, they will not experience any adverse environmental conditions, and the Trip Setpoint reflects only steady state instrument uncertainties.

30 High Allowable Value 20

Containment Pressure – High 2 must be OPERABLE in MODES 1, 2, and 3, when there is sufficient energy in the primary and secondary side to pressurize the containment following a pipe

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

d → g.

31

33

Steam Line Isolation – High Steam Flow Coincident With Safety Injection and Coincident With T_{avg} – Low ~~Low (Two Loop Units)~~ (continued)

6

Two steam line flow channels per steam line are required OPERABLE for this Function. These are combined in a one-out-of-two logic to indicate high steam flow in one steam line. The steam flow transmitters provide control inputs, but the control function cannot cause the events that the function must protect against. Therefore, two channels are sufficient to satisfy redundancy requirements. The one-out-of-two configuration allows online testing because trip of one high steam flow channel is not sufficient to cause initiation.

E
RAI 3.3.2-2

The High Steam Flow Allowable Value is a ΔP corresponding to 25% of full steam flow at no load steam pressure. ~~The Trip Setpoint is similarly calculated.~~

20 ← 6

20

58 → containment

With the transmitters (d/p cells) ~~typically~~ located inside the steam tunnels, it is possible for them to experience adverse environmental conditions during an SLB event. Therefore, the Trip Setpoints reflect both steady state and adverse environmental instrument uncertainties.

6

20 → Allowable Values

The main steam line isolates only if the high steam flow signal occurs coincident with an SI and ~~low~~ low RCS average temperature. The Main Steam Line Isolation Function requirements for the SI Functions are the same as the requirements for their SI function. Therefore, the requirements are not repeated in Table 3.3.2-1. Instead, Function 1, SI, is referenced for all initiating functions and requirements.

33

59

The T_{avg}-Low Function consists of four channels (two in each loop), providing input to both trains in a two-out-of-four logic configuration.

Three

59

Two channels of T_{avg} ~~per loop~~ are required to be OPERABLE. ~~The T_{avg} channels are combined in a logic such that two channels tripped cause a trip for the parameter.~~ The accidents that this Function protects against cause reduction of T_{avg} in the entire primary system. Therefore, the provision of two OPERABLE channels ~~per loop in a~~

Three

59

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

e → h

31

Steam Line Isolation – High High Steam Flow

Coincident With Safety Injection ~~(Two Loop Units)~~ (continued)

6

Two steam line flow channels per steam line are required to be OPERABLE for this Function. These are combined in a one-out-of-two logic to indicate high steam flow in one steam line. The steam flow transmitters provide control inputs, but the control function cannot cause the events that the Function must protect against. Therefore, two channels are sufficient to satisfy redundancy requirements.

E

RAI 3.3.2-2

6 → 120

20 →

The Allowable Value for high steam flow is a ΔP, corresponding to 130% of full steam flow at full steam pressure. ~~The Trip Setpoint is similarly calculated.~~

6

containment →

With the transmitters ~~typically~~ located inside the steam tunnels, it is possible for them to experience adverse environmental conditions during an SLB event. Therefore, the ~~Trip~~ Setpoint reflects both steady state and adverse environmental instrument uncertainties.

20 → Allowable Value →

20

The main steam lines isolate only if the high steam flow signal occurs coincident with an SI signal. The Main Steam Line Isolation Function requirements for the SI Functions are the same as the requirements for their SI function. Therefore, the requirements are not repeated in Table 3.3.2-1. Instead, Function 1, SI, is referenced for all initiating functions and requirements.

This Function must be OPERABLE in MODES 1, 2, and 3 when a secondary side break or stuck open valve could result in rapid depressurization of the steam lines unless all MSIVs are closed and [de-activated]. This Function is not required to be OPERABLE in MODES 4, 5, and 6 because there is insufficient energy in the secondary side of the unit to have an accident.

20 → de-activated →

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

b. ~~Turbine Trip and~~ Feedwater Isolation – Steam Generator Water Level – High ~~High (P-14)~~ (continued)

instruments provide input to the SG Water Level Control System. Therefore, the actuation logic must be able to withstand both an input failure to the control system (which may then require the protection function actuation) and a single failure in the other channels providing the protection function actuation. Thus, four OPERABLE channels are required to satisfy the requirements with a two-out-of-four logic. For units that have dedicated protection and control channels, only three protection channels are necessary to satisfy the protective requirements. For other units that have only three channels, a median signal selector is provided or justification is provided in NUREG-1218 (Ref. 7).

If this input to the SG Water Level Control System fails low, it would cause a control action to open the Feedwater Control Valve for the affected SG. The remaining channels, in a two-out-of-two configuration, would be required to detect a high SG Water level condition and initiate a Feedwater Isolation to prevent an overfill condition. Therefore, this configuration does not meet the single failure criteria of Reference 1. However, justification for a two-out-of-three Feedwater Isolation – SG Water Level – High Function is provided in NUREG-1218, Reference 5.

~~The transmitters (d/p cells) are located inside containment. However, the events that this Function protects against cannot cause a severe environment in containment. Therefore, the Trip Setpoint reflects only steady state instrument uncertainties.~~

RAI 3.3.2-3

The field setting for Feedwater Isolation – SG Water Level – High was developed outside of the setpoint methodology and has been provided by the NSSS supplier. No analytical value is assumed in the accident analysis for this function.

c. ~~Turbine Trip and~~ Feedwater Isolation – Safety Injection

~~Turbine Trip and~~ Feedwater Isolation is also initiated by all Functions that initiate SI. The Feedwater Isolation Function requirements for these Functions are the same as the requirements for their SI function. Therefore, the requirements are not repeated in Table 3.3.2-1. Instead Function 1, SI, is referenced for all initiating functions and requirements.

~~Turbine Trip and~~ Feedwater Isolation Functions must be OPERABLE in MODES 1 and 2 and 3 except when all ~~MFIVs~~, MFRVs, and associated bypass valves are closed and de-activated ~~[or isolated by a closed manual valve] when the MFW System is in operation and the turbine generator may be in operation.~~ In MODES ~~[3,]~~ 4, 5, and 6, the MFW System ~~and the turbine generator~~

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

~~e. Auxiliary Feedwater – Loss of Offsite Power (continued)~~

~~reactor decay heat and sensible heat removal following the reactor trip.~~

Functions 6.a through 6.e must be OPERABLE in MODES 1, 2, and 3 to ensure that the SGs remain the heat sink for the reactor. SG Water Level – Low Low in any operating SG will cause the motor driven AFW pumps to start. The system is aligned so that upon a start of the pump, water immediately begins to flow to the SGs. SG Water Level – Low Low in any two operating SGs will cause the turbine driven pump(s) to start. These Functions do not have to be OPERABLE in MODES 5 and 6 because there is not enough heat being generated in the reactor to require the SGs as a heat sink. In MODE 4, AFW actuation does not need to be OPERABLE because either AFW or residual heat removal (RHR) will already be in operation to remove decay heat or sufficient time is available to manually place either system in operation.

The LCO requires two channels per bus to be OPERABLE. A channel consists of an undervoltage relay and one set of associated contacts.

Auxiliary Feedwater – Undervoltage ~~Pump~~ Reactor Coolant Pump Bus A01 and A02

A loss of power on the buses ~~that provide power to the RCPs~~ provides indication of a pending loss of RCP forced flow in the RCS. ~~The Undervoltage RCP Function senses the voltage downstream of each RCP breaker.~~ A loss of power, or an open RCP breaker, on two or more RCPs, will start the turbine driven AFW pump to ensure that at least one SG contains enough water to serve as the heat sink for reactor decay heat and sensible heat removal following the reactor trip.

of both MFW pumps and the subsequent need for some method of decay heat removal.

A Loss of power to buses A01 and A02

~~g. Auxiliary Feedwater – Trip of All Main Feedwater Pumps~~

~~A Trip of all MFW pumps is an indication of a loss of MFW and the subsequent need for some method of decay heat and sensible heat removal to bring the reactor back to no load temperature and pressure. A turbine driven MFW pump is equipped with two pressure switches on the control air/oil~~

RAI 3.3.2-2

Errata #160

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

~~g. Auxiliary Feedwater Trip of All Main Feedwater Pumps (continued)~~

~~line for the speed control system. A low pressure signal from either of these pressure switches indicates a trip of that pump. Motor driven MFW pumps are equipped with a breaker position sensing device. An open supply breaker indicates that the pump is not running. Two OPERABLE channels per pump satisfy redundancy requirements with one out of two taken twice logic. A trip of all MFW pumps starts the motor driven and turbine driven AFW pumps to ensure that at least one SG is available with water to act as the heat sink for the reactor.~~

40

E
Errata #160

40 → Function 6.d → ~~Functions 6.f and 6.g~~ must be OPERABLE in MODES 1 and 2. This ensures that at least one SG is prov ided with water to serve as the heat sink to remove reactor decay heat and sensible heat in the event of an accident. In MODES 3, 4, and 5, the ~~RCPs and~~ MFW pumps may be normally shut down, and thus ~~neither~~ pump trip is indicative of a condition requiring automatic AFW initiation.

54

40 → a
40 → not

h. Auxiliary Feedwater – Pump Suction Transfer on Suction Pressure – Low

40

A low pressure signal in the AFW pump suction line protects the AFW pumps against a loss of the normal supply of water for the pumps, the CST. Two pressure switches are located on the AFW pump suction line from the CST. A low pressure signal sensed by any one of the switches will cause the emergency supply of water for both pumps to be aligned, or cause the AFW pumps to stop until the emergency source of water is aligned. ESW (safety grade) is then lined up to supply the AFW pumps to ensure an adequate supply of water for the AFW System to maintain at least one of the SGs as the heat sink for reactor decay heat and sensible heat removal.

Since the detectors are located in an area not affected by HELBs or high radiation, they will not experience any adverse environmental

BASES

ACTIONS (continued)

B.1, B.2.1 and B.2.2

Condition B applies to manual initiation of:

- SI; and
- ~~Containment Spray;~~
- ~~Phase A~~ Isolation; ~~and~~
- ~~Phase B Isolation.~~

~~This action addresses the train orientation of the SSPS for the functions listed above.~~ If a channel ~~or train~~ is inoperable, 48 hours is allowed to return it to an OPERA BLE status. ~~Note that for containment spray and Phase B isolation, failure of one or both channels in one train renders the train inoperable. Condition B, therefore, encompasses both situations.~~ The specified Completion Time is reasonable considering that there are two automatic actuation trains and another manual initiation train OPERABLE for each Function, and the low probability of an event occurring during this interval. If the train cannot be restored to OPERABLE status, the unit must be placed in a MODE in which the LCO does not apply. This is done by placing the unit in at least MODE 3 within an additional 6 hours (54 hours total time) and in MODE 5 within an additional 30 hours (84 hours total time). The allowable Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

E RAI 3.3.2-2

C.1, C.2.1 and C.2.2

Condition C applies to the automatic actuation logic and actuation relays for the following functions:

- SI;
- Containment Spray; and
- Phase A Isolation;

BASES

ACTIONS

C.1, C.2.1 and C.2.2 (continued)

~~• Phase B Isolation; and~~ 27

~~• Automatic Switchover to Containment Sump.~~ 42

~~This action addresses the train orientation of the SSPS and the master and slave relays.~~ 45 If one train is inoperable, 6 hours are allowed to restore the train to OPERABLE status. The specified Completion Time is reasonable considering that there is another train OPERABLE, and the low probability of an event occurring during this interval. If the train cannot be restored to OPERABLE status, the unit must be placed in a MODE in which the LCO does not apply. This is done by placing the unit in at least MODE 3 within an additional 6 hours (12 hours total time) and in MODE 5 within an additional 30 hours (42 hours total time). The Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

6 ~~The Required Actions are modified by a Note that allows one train to be bypassed for up to [4] hours for surveillance testing, provided the other train is OPERABLE. This allowance is based on the reliability analysis assumption of WCAP-10271-P-A (Ref. 8) that 4 hours is the average time required to perform channel surveillance.~~ E RAI 3.3.2-6

D.1, D.2.1, and D.2.2

Condition D applies to:

- Containment Pressure – High ~~1.~~ 22 6
- 6 Pressurizer Pressure – Low ~~(two, three, and four loop units)~~;
- Steam Line Pressure – Low;
- 23 ~~Steam Line Differential Pressure – High;~~
- 24 ~~High Steam Flow in Two Steam Lines Coincident With T_{avg} – Low Low or Coincident With Steam Line Pressure – Low;~~

BASES

ACTIONS

D.1, D.2.1, and D.2.2 (continued)

- Containment Pressure – High 2 (High) (30)
- ~~Steam Line Pressure – Negative Rate – High;~~ (31)
- High Steam Flow Coincident With Safety Injection Coincident With T_{avg} – Low ~~Low~~; (33)
- High High Steam Flow Coincident With Safety Injectio n; (E) RAI 3.3.2-2
- ~~High Steam Flow in Two Steam Lines Coincident With T_{avg} – Low Low;~~ (31)
- SG Water level – Low Low ~~(two, three, and four loop units)~~; and (6)
- SG Water level – High ~~High (P-14)~~ ~~(two, three, and four loop units)~~. (6) (37)

If one channel is inoperable, ~~6 hours are~~ allowed to restore the channel to OPERABLE status or to place it in the tripped condition. Generally this Condition applies to functions that operate on two-out-of-three logic. Therefore, failure of one channel places the Function in a two-out-of-two configuration. One channel must be tripped to place the Function in a one-out-of-three configuration that satisfies redunda ncy requirements. (1 hour is) (70) (E) RAI 3.3.2-5

Placing the channel in the tripped condition is necessary to maintain a logic configuration that satisfies redundancy requirements. (59)

Failure to restore the inoperable channel to OPERABLE status or place it in the tripped condition within 6 hours requires the unit be placed in MODE 3 within the following 6 hours and MODE 4 within the next 6 hours. (1 hour) (70) (E) RAI 3.3.2-5

The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. In MODE 4, these Functions are no longer required OPERABLE.

(67) ~~The Required Actions are modified by a Note that allows the inoperable channel to be bypassed for up to [4] hours for surveillance testing of other channels. The 6 hours allowed to restore the channel to OPERABLE status or to place the inoperable channel in the tripped condition, and the 4 hours allowed for testing, are justified in Reference 8.~~ (E) RAI 3.3.2-6

BASES

ACTIONS
(continued)

E.1, E.2.1, and E.2.2

Condition E applies to:

- Containment Spray Containment Pressure – High 3 (High, High) (two, three, and four loop units); and
- Containment Phase B Isolation Containment Pressure – High 3 (High, High).

68 → Replace with Insert E

None of these signals has input to a control function. Thus, two-out-of-three logic is necessary to meet acceptable protective requirements. However, a two -out-of-three design would require tripping a failed channel. This is undesirable because a single failure would then cause spurious containment spray initiation. Spurious spray actuation is undesirable because of the cleanup problems presented. Therefore, these channels are designed with two-out-of-four logic so that a failed channel may be bypassed rather than tripped. Note that one channel may be bypassed and still satisfy the single failure criterion. Furthermore, with one channel bypassed, a single instrumentation channel failure will not spuriously initiate containment spray.

To avoid the inadvertent actuation of containment spray and Phase B containment isolation, the inoperable channel should not be placed in the tripped condition. Instead it is bypassed. Restoring the channel to OPERABLE status, or placing the inoperable channel in the bypass condition within 6 hours, is sufficient to assure that the Function remains OPERABLE and minimizes the time that the Function may be in a partial trip condition (assuming the inoperable channel has failed high). The Completion Time is further justified based on the low probability of an event occurring during this interval. Failure to restore the inoperable channel to OPERABLE status, or place it in the bypassed condition within 6 hours, requires the unit be placed in MODE 3 within the following 6 hours and MODE 4 within the next 6 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. In MODE 4, these Functions are no longer required OPERABLE.

E
RAI 3.3.2-2

Insert E

E.1, E.2.1 and E.2.2

Condition E applies to manual initiation of Containment Spray. If one or both channels are inoperable, 1 hour is allowed to return the inoperable channel(s) to OPERABLE status. The Completion Time of one hour is reasonable considering that there are OPERABLE automatic actuation functions credited to perform the safety function and the low probability of an event occurring during this interval. If the inoperable channel(s) cannot be restored to OPERABLE status, the unit must be placed in a MODE in which the LCO does not apply. This is done by placing the unit in at least MODE 3 within an additional 6 hours (7 hours total time) and in MODE 5 within an additional 30 hours (37 hours total time). The allowable Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

RAI 3.3.2-2

BASES

ACTIONS

~~E.1, E.2.1, and E.2.2~~ (continued)

~~The Required Actions are modified by a Note that allows one additional channel to be bypassed for up to [4] hours for surveillance testing. Placing a second channel in the bypass condition for up to 4 hours for testing purposes is acceptable based on the results of Reference 8.~~

8

F.1, F.2.1, and F.2.2

Condition F applies to:

- Manual Initiation of Steam Line Isolation;

E
RAI 3.3.2-2

40

- ~~Loss of Offsite Power;~~
- ~~Auxiliary Feedwater Pump Suction Transfer on Suction Pressure Low; and~~

43

- ~~P-4 Interlock.~~

45

~~For the Manual Initiation and the P-4 Interlock Functions, this action addresses the train orientation of the SSPS.~~ ~~For the Loss of Offsite Power Function, this action recognizes the lack of manual trip provision for a failed channel. For the AFW System pump suction transfer channels, this action recognizes that placing a failed channel in trip during operation is not necessarily a conservative action. Spurious trip of this function could align the AFW System to a source that is not immediately capable of supporting pump suction.~~

40

5

If a channel is inoperable, 1 hour is allowed to return it to OPERABLE status. The Completion Time of one hour is reasonable considering the low probability of an event occurring during this interval.

If a train or channel is inoperable, 48 hours is allowed to return it to OPERABLE status. The specified Completion Time is reasonable considering the nature of these Functions, the available redundancy, and the low probability of an event occurring during this interval. If the Function cannot be returned to OPERABLE status, the unit must be placed in MODE 3 within the next 6 hours and MODE 4 within the following 6 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power in an orderly manner and without challenging unit systems. In MODE 4, the unit does not have any analyzed transients or conditions that require the explicit use of the protection functions noted above.

BASES

ACTIONS (continued)

G.1, G.2.1 and G.2.2

Condition G applies to the automatic actuation logic and actuation relays for the Steam Line Isolation ~~E,Turbine Trip~~ and Feedwater Isolation, and AFW actuation Functions.

~~The action addresses the train orientation of the SSPS and the master and slave relays for these functions.~~ If one train is inoperable, 6 hours are allowed to restore the train to OPERABLE status. The Completion Time for restoring a train to OPERABLE status is reasonable considering that there is another train OPERABLE, and the low probability of an event occurring during this interval. If the train cannot be returned to OPERABLE status, the unit must be brought to MODE 3 within the next 6 hours and MODE 4 within the following 6 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. Placing the unit in MODE 4 removes all requirements for OPERABILITY of the protection channels and actuation functions. In this MODE, the unit does not have analyzed transients or conditions that require the explicit use of the protection functions noted above.

~~The Required Actions are modified by a Note that allows one train to be bypassed for up to [4] hours for surveillance testing provided the other train is OPERABLE. This allowance is based on the reliability analysis (Ref. 8) assumption that 4 hours is the average time required to perform channel surveillance.~~

~~H.1 and H.2~~

~~Condition H applies to the automatic actuation logic and actuation relays for the Turbine Trip and Feedwater Isolation Function.~~

~~This action addresses the train orientation of the SSPS and the master and slave relays for this Function. If one train is inoperable, 6 hours are allowed to restore the train to OPERABLE status or the unit must be placed in MODE 3 within the following 6 hours. The Completion Time for restoring a train to OPERABLE status is reasonable considering that there is another train OPERABLE, and the low probability of~~

BASES

ACTIONS

H.1 and H.2 (continued)

an event occurring during this interval. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging unit systems. These Functions are no longer required in MODE 3. Placing the unit in MODE 3 removes all requirements for OPERABILITY of the protection channels and actuation functions. In this MODE, the unit does not have analyzed transients or conditions that require the explicit use of the protection functions noted above.

The Required Actions are modified by a Note that allows one train to be bypassed for up to [4] hours for surveillance testing provided the other train is OPERABLE. This allowance is based on the reliability analysis (Ref. 8) assumption that 4 hours is the average time require d to perform channel surveillance.

10

I.1 and I.2 ← H.1 and H.2 ← 10

10 → H Condition I applies to: ← the ← 6

RAI 3.3.2-2

- SG Water Level - High High (P-14) (two, three, and four loop units); and

6 → • Undervoltage Reactor Coolant Pump. ← Bus A01 and A02 Function.

41

6

If one channel is inoperable, 6 hours are allowed to restore one channel to OPERABLE status or to place it in the tripped condition. If placed in the tripped condition, the Function is then in a partial trip condition where one -out-of-two or one-out-of-three logic will result in actuation. The 6 hour Completion Time is justified in Reference 8. Failure to restore the inoperable channel to OPERABLE status or place it in the tripped condition within 6 hours requires the unit to be placed in MODE 3 within the following 6 hours. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging unit systems. In MODE 3, these Functions are no longer required OPERABLE.

71 → The 6 hours to place the channel in the tripped condition is necessary due to plant design requiring maintenance personnel to effect the trip of the channel outside of the control room.

6 → this Function is ← 6

RAI 3.3.2-5

BASES

ACTIONS

~~I.1 and I.2 (continued)~~

~~The Required Actions are modified by a Note that allows the inoperable channel to be bypassed for up to [4] hours for surveillance testing of other channels. The 6 hours allowed to place the inoperable channel in the tripped condition, and the 4 hours allowed for a second channel to be in the bypassed condition for testing, are justified in Reference 8.~~

67

~~J.1 and J.2~~

~~Condition J applies to the AFW pump start on trip of all MFW pumps.~~

~~This action addresses the train orientation of the SSPS for the auto start function of the AFW System on loss of all MFW pumps. The OPERABILITY of the AFW System must be assured by allowing automatic start of the AFW System pumps. If a channel is inoperable, 48 hours are allowed to return it to an OPERABLE status. If the function cannot be returned to an OPERABLE status, 6 hours are allowed to place the unit in MODE 3. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging unit systems. In MODE 3, the unit does not have any analyzed transients or conditions that require the explicit use of the protection function noted above. The allowance of 48 hours to return the train to an OPERABLE status is justified in Reference 8.~~

67

E

RAI 3.3.2-2
RAI 3.3.2-5
RAI 3.3.2-6
Errata #160

~~K.1, K.2.1 and K.2.2~~

Condition ~~K~~ applies to:

- RWST Level – Low Low Coincident with Safety Injection; and
- RWST Level – Low Low Coincident with Safety Injection and Coincident with Containment Sump Level – High.

RWST Level – Low Low Coincident With SI and Coincident With Containment Sump Level – High provides actuation of switchover to the containment sump. Note that this Function

12

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.2.5 (continued)

surveillance interval extension analysis (Ref. 8) when applicable.

The Frequency of 92 days is justified in Reference 8.

SR 3.3.2.6

SR 3.3.2.6 is the performance of a SLAVE RELAY TEST. The SLAVE RELAY TEST is the energizing of the slave relays. Contact operation is verified in one of two ways. Actuation equipment that may be operated in the design mitigation MODE is either allowed to function, or is placed in a condition where the relay contact operation can be verified without operation of the equipment. ~~Actuation equipment that may not be operated in the design mitigation MODE is prevented from operation by the SLAVE RELAY TEST circuit. For this latter case, contact operation is verified by a continuity check of the circuit containing the slave relay.~~ This test is performed every [92] days. The Frequency is adequate, based on industry operating experience, considering instrument reliability and operating history data.

18 months

SR 3.3.2.7

SR 3.3.2.7 is the performance of a TADOT every [92] days. This test is a check of the ~~Loss of Offsite Power~~ Undervoltage RCP, ~~and AFW Pump Suction Transfer on Suction Pressure - Low Functions.~~ ~~Each Function is tested up to, and including, the master transfer relay coils.~~

Bus A01 and A02 Function.

~~The test also includes trip devices that provide actuation signals directly to the SSPS.~~ ~~The SR is modified by a Note that excludes verification of setpoints for relays. Relay setpoints require elaborate bench calibration and are verified during CHANNEL CALIBRATION.~~ The Frequency is adequate. It is based on industry operating experience, considering instrument reliability and operating history data.

RAI 3.3.2-10

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.2.8

SR 3.3.2.8 is the performance of a TADOT. This test is a check of the Manual Actuation Functions ~~and AFW pump start on trip of all MFW pumps~~. It is performed every [18] months. ~~Each Manual Actuation Function is tested up to, and including, the master relay coils. In some instances, the test includes actuation of the end device (i.e., pump starts, valve cycles, etc.).~~ The Frequency is adequate, based on industry operating experience and is consistent with the typical refueling cycle. ~~The SR is modified by a Note that excludes verification of setpoints during the TADOT for manual initiation Functions. The manual initiation Functions have no associated setpoints.~~

E Errata #160

SR 3.3.2.9

SR 3.3.2.9 is the performance of a CHANNEL CALIBRATION.

A CHANNEL CALIBRATION is performed every [18] months, or approximately at every refueling. CHANNEL CALIBRATION is a complete check of the instrument loop, including the sensor. The test verifies that the channel responds to measured parameter within the necessary range and accuracy.

CHANNEL CALIBRATIONS must be performed consistent with the assumptions of the ~~unit specific~~ setpoint methodology. The difference between the current "as found" values and the previous test "as left" values must be consistent with the drift allowance used in the setpoint methodology.

The Frequency of [18] months is based on the assumption of an [18] month calibration interval in the determination of the magnitude of equipment drift in the setpoint methodology.

This SR is modified by a Note stating that this test should include verification that the time constants are adjusted to the prescribed values where applicable.

~~SR 3.3.2.10~~

~~This SR ensures the individual channel ESF RESPONSE TIMES are less than or equal to the maximum values assumed in the~~

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.2.11 (continued)

Trip Interlock, and the Frequency is once per RTB cycle. This Frequency is based on operating experience demonstrating that undetected failure of the P-4 interlock sometimes occurs when the RTB is cycled.

The SR is modified by a Note that excludes verification of setpoints during the TADOT. The Function tested has no associated setpoint.

REFERENCES

1. FSAR, Chapter [6].
2. FSAR, Chapter [7].
3. FSAR, Chapter [15].
4. IEEE-279-1971.
5. 10 CFR 50.49.
6. RTS/ESFAS Setpoint Methodology Study.
7. NUREG-1218, April 1988.
8. WCAP-10271-P-A, Supplement 2, Rev. 1, June 1990.
9. Technical Requirements Manual, Section 15, "Response Times."

DGI-01, Instrument Setpoint Methodology

E
RAI 3.3.2-1
RAI 3.3.2-5
RAI 3.3.2-6

No Significant Hazards Considerations - NUREG-1431 Section 3.03.02

15-Mar-01

NSHC Number	NSHC Text
A Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The proposed change involves reformatting and rewording of the current Technical Specifications. The reformatting and rewording process involves no technical changes to existing requirements. As such, this change is administrative in nature and does not impact initiators of analyzed events or assumed mitigation of accident or transient events. Therefore, this change does not increase the probability or consequences of an accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not require a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. The proposed change will not impose any new or eliminate any old requirements. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? The proposed change will not significantly reduce the margin of safety because it has no impact on any safety analysis assumptions. This change is administrative. As such, there is no technical change to the requirements and, therefore, there is no reduction in the margin of safety.
L.01 Rev. E	Not used.
L.02 Rev. E	Not used.

No Significant Hazards Considerations - NUREG-1431 Section 3.03.02

15-Mar-01

NSHC Number	NSHC Text
L.03 Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The proposed change does not involve any physical alteration of plant systems, structures or components, changes in parameters governing normal plant operation, or methods of operation. This change provides an exception that allows RCS hydrostatic testing in MODE 3 without the Steam Line Pressure - Low Safety Injection Function OPERABLE. In this situation, all control rods are inserted and the MSIVs are closed. The Steam Line Pressure-Low Safety Injection actuation signal generated in this condition, would not be indicative of a SLB or Feed Line Break. Therefore, this change does not involve an increase in the probability or consequences of an accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not involve any physical alteration of plant systems, structures or components, changes in parameters governing normal plant operation, or methods of operation. This change does not introduce any new modes of operation. This change provides an exception that allows RCS hydrostatic testing in MODE 3 without the Steam Line Pressure - Low Safety Injection Function OPERABLE. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created. 3. Does this change involve a significant reduction in a margin of safety? This change only provides an exception that allows RCS hydrostatic testing in MODE 3 without the Steam Line Pressure - Low Safety Injection Function OPERABLE. In this situation, all control rods are inserted and the MSIVs are closed. The Steam Line Pressure-Low Safety Injection actuation signal generated in this condition, would not be indicative of a SLB or Feed Line Break. Therefore, this change does not involve a reduction in a margin of safety.

No Significant Hazards Considerations - NUREG-1431 Section 3.03.02

15-Mar-01

NSHC Number	NSHC Text
L.04 Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The proposed change does not involve any physical alteration of plant systems, structures or components, changes in parameters governing normal plant operation, or methods of operation. The proposed change extends the surveillance frequency for CHANNEL CHECKS from "each shift" (nominally 8 hours) to 12 hours. This is acceptable because the CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the LCO required channels and because of the unlikelihood of a channel failure during this interval. Therefore, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not involve any physical alteration of plant systems, structures or components, nor does it alter parameters governing normal plant operation. The proposed change does not introduce a new mode of operation or alter the method of normal plant operation. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created. 3. Does this change involve a significant reduction in a margin of safety? There are no margins of safety related to safety analyses that are dependent upon the proposed change. The requirements will continue to assure that limiting conditions for the ESF Actuating System are properly maintained. Therefore, this change does not involve a significant reduction in a margin of safety.

No Significant Hazards Considerations - NUREG-1431 Section 3.03.02

15-Mar-01

NSHC Number	NSHC Text
L.05 Rev. E	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The proposed change extends the Allowed Outage Time for an inoperable train of Automatic Actuation Logic and Actuation Relays associated with the Safety Injection, Containment Spray, Auxiliary Feedwater, Containment Isolation, Steam Line Isolation and Feedwater Isolation Functions from 1 hour to 6 hours. The proposed change does not adversely affect accident initiators or precursors nor alter the design assumptions, conditions, and configuration of the facility or the manner in which the plant is operated and maintained. The proposed changes do not alter or prevent the ability of structures, systems, or components (SSCs) from performing their intended function to mitigate the consequences of an initiating event within the assumed acceptance limits. The proposed changes do not affect the source term, containment isolation, or radiological release assumptions used in evaluating the radiological consequences of an accident previously evaluated. Further, the proposed changes do not increase the types and amounts of radioactive effluent that may be released offsite, nor significantly increase individual or cumulative occupational/public radiation exposures. Therefore, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change extends the Allowed Outage Time for an inoperable train of Automatic Actuation Logic and Actuation Relays associated with the Safety Injection, Containment Spray, Auxiliary Feedwater, Containment Isolation, Steam Line Isolation and Feedwater Isolation Functions from 1 hour to 6 hours. The changes do not involve a physical alteration of plant (i.e., no new or different type of equipment will be installed), or a change in the methods governing normal plant operation. In addition, the changes do not impose any new or different requirements or eliminate any existing requirements. The changes do not alter assumptions made in the safety analysis and licensing basis. Therefore, the changes do not create the possibility of a new or different kind of accident from any previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? The proposed change extends the Allowed Outage Time for an inoperable train of Automatic Actuation Logic and Actuation Relays associated with the Safety Injection, Containment Spray, Auxiliary Feedwater, Containment Isolation, Steam Line Isolation and Feedwater Isolation Functions from 1 hour to 6 hours.

No Significant Hazards Considerations - NUREG-1431 Section 3.03.02

15-Mar-01

NSHC Number	NSHC Text
	There are no margins of safety related to safety analyses that are dependent upon the proposed change. The requirements will continue to assure that limiting conditions for the ESF Actuating System are properly maintained. Therefore, this change does not involve a significant reduction in a margin of safety.

No Significant Hazards Considerations - NUREG-1431 Section 3.03.02

15-Mar-01

NSHC Number	NSHC Text
L.06 Rev. E	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The proposed change deletes the note modifying the Containment Pressure quarterly test requirement, which states, "Test of Narrow Range Pressure, 3.0 psig, -3.0 psig excluded." This information provides details that are not directly pertinent to the actual requirements, but rather describe instrumentation which is not included in the requirement. These details are not necessary to describe the regulatory requirement. The proposed change does not adversely affect accident initiators or precursors nor alter the design assumptions, conditions, and configuration of the facility or the manner in which the plant is operated and maintained. The proposed changes do not alter or prevent the ability of structures, systems, or components (SSCs) from performing their intended function to mitigate the consequences of an initiating event within the assumed acceptance limits. The proposed changes do not affect the source term, containment isolation, or radiological release assumptions used in evaluating the radiological consequences of an accident previously evaluated. Further, the proposed changes do not increase the types and amounts of radioactive effluent that may be released offsite, nor significantly increase individual or cumulative occupational/public radiation exposures. Therefore, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change deletes the note modifying the Containment Pressure quarterly test requirement, which states, "Test of Narrow Range Pressure, 3.0 psig, -3.0 psig excluded." This information provides details that are not directly pertinent to the actual requirements, but rather describe instrumentation which is not included in the requirement. These details are not necessary to describe the regulatory requirement. The changes do not involve a physical alteration of plant (i.e., no new or different type of equipment will be installed), or a change in the methods governing normal plant operation. In addition, the changes do not impose any new or different requirements or eliminate any existing requirements. The changes do not alter assumptions made in the safety analysis and licensing basis. Therefore, the changes do not create the possibility of a new or different kind of accident from any previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? The proposed change deletes the note modifying the Containment Pressure quarterly test requirement, which states, "Test of Narrow Range Pressure, 3.0 psig, -3.0 psig excluded."

NSHC Number	NSHC Text
	This information provides details that are not directly pertinent to the actual requirements, but rather describe instrumentation which is not included in the requirement. These details are not necessary to describe the regulatory requirement. There are no margins of safety related to safety analyses that are dependent upon the proposed change. The requirements will continue to assure that limiting conditions for the ESF Actuating System are properly maintained. Therefore, this change does not involve a significant reduction in a margin of safety.
LA Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The proposed change relocates requirements from the Technical Specifications to the Bases, FSAR, or other plant controlled documents. The Bases and FSAR will be maintained using the provisions of 10 CFR 50.59. In addition to 10 CFR 50.59 provisions, the Technical Specifications Bases are subject to the change process in the Administrative Controls Chapter of the ITS. Plant procedures and other plant controlled documents are subject to controls imposed by plant administrative procedures, which endorse applicable regulations and standards. Changes to the Bases, FSAR, or other plant controlled documents will be evaluated in accordance with the requirements of the Bases Control Program in Chapter 5.0 of the ITS, 10 CFR 50.59, or plant administrative processes. Therefore, no increase in the probability or consequences of an accident previously evaluated will be allowed. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not require a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. The proposed change will not impose any different requirements and adequate control of the information will be maintained. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? The proposed change will not reduce a margin of safety because it has no impact on any safety analysis assumptions. In addition, the requirements to be moved from the Technical Specifications to the Bases, FSAR, or other plant controlled documents are as they currently exist. Future changes to the requirements in the Bases, FSAR, or other plant controlled documents will be evaluated in accordance with the requirements of 10 CFR 50.59, the Bases Control Program in Chapter 5.0 of the ITS, or the applicable plant process and no reduction in a margin of safety will be allowed.

No Significant Hazards Considerations - NUREG-1431 Section 3.03.02

15-Mar-01

NSHC Number	NSHC Text
M Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The proposed change provides more restrictive requirements for operation of the facility. These more stringent requirements do not result in operation that will increase the probability of initiating an analyzed event and do not alter the assumptions relative to the mitigation of an accident or transient event. These more restrictive requirements continue to ensure process variables, structures, systems and components are maintained consistent with the safety analyses. Therefore, this change does not increase the probability or consequences of an accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not require a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. The proposed change does impose different requirements. However, these changes are consistent with assumptions made in the safety analysis. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? The imposition of more restrictive requirements either has no affect on or increases the margin of safety. Each change is providing additional restrictions to enhance plant safety. These changes are consistent with the safety analysis. Therefore, this change does not involve a reduction in a margin of safety.

3.3 INSTRUMENTATION

3.3.2 Engineered Safety Feature Actuation System (ESFAS) Instrumentation

LCO 3.3.2 The ESFAS instrumentation for each Function in Table 3.3.2-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.2-1.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one or more required channels or trains inoperable.	A.1 Enter the Condition referenced in Table 3.3.2-1 for the channel(s) or train(s).	Immediately
B. One channel inoperable.	B.1 Restore channel to OPERABLE status. OR B.2.1 Be in MODE 3. AND B.2.2 Be in MODE 5.	48 hours 54 hours 84 hours

E
RAI 3.3.2-2

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME	
C. One train inoperable.	C.1 Restore train to OPERABLE status. OR C.2.1 Be in MODE 3. AND C.2.2 Be in MODE 5.	6 hours 12 hours 42 hours	E RAI 3.3.2-6
D. One channel inoperable.	D.1 Place channel in trip. OR D.2.1 Be in MODE 3. AND D.2.2 Be in MODE 4.	1 hour 7 hours 13 hours	E RAI 3.3.2-5 RAI 3.3.2-6
E. One or both channel(s) inoperable.	E.1 Restore channel(s) to OPERABLE status. OR E.2.1 Be in MODE 3. AND E.2.2 Be in MODE 5.	1 hour 7 hours 37 hours	E RAI 3.3.2-2

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME	
F. One channel inoperable.	F.1 Restore channel to OPERABLE status. OR F.2.1 Be in MODE 3. AND F.2.2 Be in MODE 4.	1 hour 7 hours 13 hours	E RAI 3.3.2-2
G. One train inoperable.	G.1 Restore train to OPERABLE status. OR G.2.1 Be in MODE 3. AND G.2.2 Be in MODE 4.	6 hours 12 hours 18 hours	E RAI 3.3.2-2 RAI 3.3.2-6
H. One channel inoperable.	H.1 Place channel in trip. OR H.2 Be in MODE 3.	6 hours 12 hours	E RAI 3.3.2-2 RAI 3.3.2-6 Errata #160
I. One or more channels inoperable.	I.1 Verify interlock is in required state for existing unit condition. OR I.2.1 Be in MODE 3. AND I.2.2 Be in MODE 4.	1 hour 7 hours 13 hours	

SURVEILLANCE REQUIREMENTS

----------NOTE----------
Refer to Table 3.3.2-1 to determine which SRs apply for each ESFAS Function.

	SURVEILLANCE	FREQUENCY
SR 3.3.2.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.2.2	----------NOTE---------- The continuity check may be excluded. --- Perform ACTUATION LOGIC TEST.	31 days on a STAGGERED TEST BASIS
SR 3.3.2.3	Perform COT.	92 days
SR 3.3.2.4	Perform MASTER RELAY TEST.	18 months
SR 3.3.2.5	Perform SLAVE RELAY TEST.	18 months
SR 3.3.2.6	Perform TADOT.	31 days
SR 3.3.2.7	Perform TADOT.	18 months
SR 3.3.2.8	----------NOTE---------- This Surveillance shall include verification that the time constants are adjusted to the prescribed values. --- Perform CHANNEL CALIBRATION.	18 months

Table 3.3.2-1 (page 1 of 3)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Safety Injection					
a. Manual Initiation	1,2,3,4	2	B	SR 3.3.2.7	NA
b. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	C	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.5	NA
c. Containment Pressure—High	1,2,3	3	D	SR 3.3.2.1 SR 3.3.2.3 SR 3.3.2.8	≤ 6 psig
d. Pressurizer Pressure—Low	1,2,3(a)	3	D	SR 3.3.2.1 SR 3.3.2.3 SR 3.3.2.8	≥ 1715 psig
e. Steam Line Pressure—Low	1,2,3(b)	3 per steam line	D	SR 3.3.2.1 SR 3.3.2.3 SR 3.3.2.8	≥ 500(c) psig
2. Containment Spray					
a. Manual Initiation	1,2,3,4	2	E	SR 3.3.2.7	NA
b. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	C	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.5	NA
c. Containment Pressure—High High	1,2,3	2 sets of 3	D	SR 3.3.2.1 SR 3.3.2.3 SR 3.3.2.8	≤ 30 psig

(continued)

(a) Pressurizer Pressure > 1800 psig.

(b) Pressurizer Pressure > 1800 psig, except during Reactor Coolant System hydrostatic testing.

(c) Time constants used in the lead/lag controller are $t_1 \geq 12$ seconds and $t_2 \leq 2$ seconds.

E

RAI 3.3.2-2
RAI 3.3.2-10
Errata #161

Table 3.3.2-1 (page 2 of 3)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
3. Containment Isolation					
a. Manual Initiation	1,2,3,4	2	B	SR 3.3.2.7	NA
b. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	C	SR 3.3.2.4 SR 3.3.2.5	NA
c. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements, except Manual SI initiation.				
4. Steam Line Isolation					
a. Manual Initiation	1,2(d),3(d)	1/loop	F	SR 3.3.2.7	NA
b. Automatic Actuation Logic and Actuation Relays	1,2(d),3(d)	2 trains	G	SR 3.3.2.2 SR 3.3.2.5	NA
c. Containment Pressure—High High	1,2(d),3(d)	3	D	SR 3.3.2.1 SR 3.3.2.3 SR 3.3.2.8	≤ 20 psig
d. High Steam Flow	1,2(d),3(d)	2 per steam line	D	SR 3.3.2.1 SR 3.3.2.3 SR 3.3.2.8	≤ Δp corresponding to 0.66×10^6 lb/hr at 1005 psig
Coincident with Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.				
and					
Coincident with T_{avg}—Low	1,2(d),3(d)	3	D	SR 3.3.2.1 SR 3.3.2.3 SR 3.3.2.8	≥ 540°F
e. High High Steam Flow	1,2(d),3(d)	2 per steam line	D	SR 3.3.2.1 SR 3.3.2.3 SR 3.3.2.8	≤ Δp corresponding to 4×10^6 lb/hr at 806 psig
Coincident with Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.				

E
RAI 3.3.2-2
RAI 3.3.2-10
Erraata #111

E
RAI 3.3.2-2
RAI 3.3.2-10
Erraata #150

E
RAI 3.3.2-2
RAI 3.3.2-10

(continued)

(d) Except when all MSIVs are closed and de-activated.

Table 3.3.2-1 (page 3 of 3)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
5. Feedwater Isolation					
a. Automatic Actuation Logic and Actuation Relays	$1,2^{(e)},3^{(e)}$	2 trains	G	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.5	NA
b. SG Water Level—High	$1,2^{(e)},3^{(e)}$	3 per SG	D	SR 3.3.2.1 SR 3.3.2.3 SR 3.3.2.8	(f)
c. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.				
6. Auxiliary Feedwater					
a. Automatic Actuation Logic and Actuation Relays	1,2,3	2 trains	G	SR 3.3.2.2	NA
b. SG Water Level—Low Low	1,2,3	3 per SG	D	SR 3.3.2.1 SR 3.3.2.3 SR 3.3.2.8	≥ 20%
c. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.				
d. Undervoltage Bus A01 and A02	1,2	2 per bus	H	SR 3.3.2.6 SR 3.3.2.8	≥ 3120 V
7. Condensate Isolation					
a. Containment Pressure—High	$1,2^{(e)},3^{(e)}$	3	D	SR 3.3.2.1 SR 3.3.2.3 SR 3.3.2.8	≤ 6 psig
b. Automatic Actuation Logic and Actuation Relays	$1,2^{(e)},3^{(e)}$	2 trains	G	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.5	N/A
8. SI Block-Pressurizer Pressure	1,2,3	3	I	SR 3.3.2.1 SR 3.3.2.3 SR 3.3.2.8	≤ 1800 psig

E

RAI 3.3.2-2
RAI 3.3.2-3
RAI 3.3.2-10
Errata #160

(e) Except when all MFRVs and associated bypass valves are closed and de-activated.

(f) Field setting of ≤ 78% of span (nominal).

B 3.3 INSTRUMENTATION

B 3.3.2 Engineered Safety Feature Actuation System (ESFAS) Instrumentation

BASES

BACKGROUND

The ESFAS initiates necessary safety systems, based on the values of selected unit parameters, to protect against violating core design limits and the Reactor Coolant System (RCS) pressure boundary, and to mitigate accidents.

The ESFAS instrumentation is segmented into three distinct but interconnected modules as identified below:

- Field transmitters or process sensors and instrumentation: provide a measurable electronic signal based on the physical characteristics of the parameter being measured;
- Signal processing equipment including analog protection system, field contacts, and protection channel sets: provide signal conditioning, compatible electrical signal output to protection system devices, and control board/control room/miscellaneous indications; and
- Relay Logic Racks including input, logic and output devices: initiates proper Engineered Safety Feature (ESF) actuation in accordance with the defined logic and based on the bistable outputs from the signal process control and protection system.

Field Transmitters or Sensors

To meet the design demands for redundancy and reliability, more than one, and often as many as four, field transmitters or sensors are used to measure unit parameters. In many cases, field transmitters or sensors that input to the ESFAS are shared with the Reactor Protection System (RPS). In some cases, the same channels also provide control system inputs. To account for calibration tolerances and instrument drift, which are assumed to occur between calibrations, statistical allowances are provided in the Allowable Values. The OPERABILITY of each transmitter or sensor can be evaluated when its "as found" calibration data are compared against its documented acceptance criteria.

BASES

BACKGROUND (continued)

Signal Processing Equipment

Generally, three or four channels of process control equipment are used for the signal processing of unit parameters measured by the field instruments. The process control equipment provides signal conditioning, comparable output signals for instruments located on the main control board, and comparison of measured input signals with setpoints established by safety analyses. If the measured value of a unit parameter exceeds the predetermined setpoint, an output from a bistable is forwarded to the logic relays.

Generally, if a parameter is used only for input to the protection circuits, three channels with a two-out-of-three logic are sufficient to provide the required reliability and redundancy. If one channel fails in a direction that would not result in a partial Function trip, the Function is still OPERABLE with a two-out-of-two logic. If one channel fails such that a partial Function trip occurs, a trip will not occur and the Function is still OPERABLE with a one-out-of-two logic.

Generally, if a parameter is used for input to the Relay Logic Racks and a control function, four channels with a two-out-of-four logic are sufficient to provide the required reliability and redundancy. The circuit must be able to withstand both an input failure to the control system, which may then require the protection function actuation, and a single failure in the other channels providing the protection function actuation. Again, a single failure will neither cause nor prevent the protection function actuation.

These requirements are described in IEEE-279-1968 (Ref. 2).

Allowable Values

To allow for calibration tolerances, instrumentation uncertainties and instrument drift, the Allowable Values specified in Table 3.3.2-1 in the accompanying LCO are conservatively adjusted with respect to the analytical limits. A detailed description of the methodology used to calculate the Allowable Values, including their explicit uncertainties, is provided in DGI-01, Instrument Setpoint Methodology (Ref. 4). The actual nominal Trip Setpoint entered into the bistable is more conservative than that specified by the Allowable Value to account for changes in random measurement errors detectable by a COT. If the measured setpoint does not exceed the Allowable Value, the bistable is considered OPERABLE.

E
RAI 3.3.2-1

Setpoints in accordance with the Allowable Value ensure that the consequences of Design Basis Accidents (DBAs) will be acceptable, providing the unit is operated from within the LCOs at the onset of the

BASES

BACKGROUND (continued)

DBA and the equipment functions as designed.

Each channel can be tested on line to verify that the signal processing equipment and setpoint accuracy is within the specified allowance requirements. Once a designated channel is taken out of service for testing, a simulated signal is injected in place of the field instrument signal. The process equipment for the channel in test is then tested, verified, and calibrated. SRs for the channels are specified in the SR section.

The Allowable Values listed in Table 3.3.2-1 are based on the methodology described in Reference 4, which incorporates all of the known uncertainties applicable for each channel. The magnitudes of these uncertainties are factored into the determination of each Allowable Value. All field sensors and signal processing equipment for these channels are assumed to operate within the allowances of these uncertainty magnitudes.

E
RAI 3.3.2-1

Relay Logic Racks

The Relay Logic Rack equipment is used for the decision logic processing of outputs from the signal processing equipment bistables. To meet the redundancy requirements, two trains of Relay Logic Racks, each performing the same functions, are provided.

The Relay Logic Racks perform the decision logic for most ESF equipment actuation; generates the electrical output signals that initiate the required actuation; and provides the status, permissive, and annunciator output signals to the main control room of the unit.

The bistable outputs from the signal processing equipment are sensed by the Relay Logic Rack equipment and combined into logic matrices that represent combinations indicative of various transients. If a required logic matrix combination is completed, the system will send actuation signals via master and slave relays to those components whose aggregate Function best serves to alleviate the condition and restore the unit to a safe condition. Examples are given in the Applicable Safety Analyses, LCO, and Applicability sections of this Bases.

The actuation of ESF components is accomplished through master and slave relays. The Relay Logic Racks energize the master relays appropriate for the condition of the unit. Each master relay then energizes one or more slave relays, which then cause actuation of the end devices.

BASES

APPLICABLE SAFETY ANALYSES, LCO, AND APPLICABILITY

Each of the analyzed accidents can be detected by one or more ESFAS Functions. One of the ESFAS Functions is the primary actuation signal for that accident. An ESFAS Function may be the primary actuation signal for more than one type of accident. An ESFAS Function may also be a secondary, or backup, actuation signal for one or more other accidents. For example, Pressurizer Pressure-Low is a primary actuation signal for small loss of coolant accidents (LOCAs) and a backup actuation signal for steam line breaks (SLBs) outside containment. Functions such as manual initiation, not specifically credited in the accident safety analysis, are qualitatively credited in the safety analysis and the NRC staff approved licensing basis for the unit. These Functions may provide protection for conditions that do not require dynamic transient analysis to demonstrate Function performance. These Functions may also serve as backups to Functions that were credited in the accident analysis (Ref. 1).

E Errata #162

The LCO requires all instrumentation performing an ESFAS Function to be OPERABLE. Failure of any instrument renders the affected channel(s) inoperable and reduces the reliability of the affected Functions.

The LCO generally requires OPERABILITY of four or three channels in each instrumentation function and two channels in each logic function. The two-out-of-three and the two-out-of-four configurations allow one channel to be tripped during maintenance or testing without causing an ESFAS initiation. Two logic channels are required to ensure no single random failure disables the ESFAS.

The required channels of ESFAS instrumentation provide unit protection in the event of any of the analyzed accidents. ESFAS protection functions are as follows:

1. Safety Injection

   Safety Injection (SI) provides two primary functions:

   1. Primary side water addition to ensure maintenance or recovery of reactor vessel water level (coverage of the active fuel for heat removal, clad integrity, and for limiting peak clad temperature to < 2200°F); and

   2. Boration to ensure recovery and maintenance of SDM (k_{eff} < 1.0).

BASES

APPLICABLE SAFETY ANALYSES, LCO, AND APPLICABILITY (continued)

These functions are necessary to mitigate the effects of high energy line breaks (HELBs) both inside and outside of containment. The SI signal is also used to initiate other Functions such as:

- Containment Isolation;
- Containment Ventilation Isolation;
- Reactor Trip;
- Feedwater Isolation;
- Start of motor driven auxiliary feedwater (AFW) pumps; and
- Control room ventilation isolation.

These other functions ensure:

- Isolation of nonessential systems through containment penetrations;
- Trip of the reactor to limit power generation;
- Isolation of main feedwater (MFW) to limit secondary side mass losses;
- Start of AFW to ensure secondary side cooling capability; and
- Isolation of the control room to ensure habitability.

a. Safety Injection-Manual Initiation

The LCO requires one channel per train to be OPERABLE. The operator can initiate SI at any time by using either of two switches in the control room. This action will cause actuation of all components in the same manner as any of the automatic actuation signals with the exception of Containment Isolation.

E RAI 3.3.2-2

The LCO for the Manual Initiation Function ensures the proper amount of redundancy is maintained in the manual ESFAS actuation circuitry to ensure the operator has manual ESFAS initiation capability.

E RAI 3.3.2-2

Each channel consists of one push button and the interconnecting wiring to the actuation logic cabinet. Each push button actuates both trains. This configuration does not allow testing at power.

BASES

APPLICABLE SAFETY ANALYSES, LCO, AND APPLICABILITY (continued)

b. Safety Injection-Automatic Actuation Logic and Actuation Relays

This LCO requires two trains to be OPERABLE. Actuation logic consists of all circuitry housed within the actuation subsystems, including the initiating relay contacts responsible for actuating the ESF equipment.

Manual and automatic initiation of SI must be OPERABLE in MODES 1, 2, and 3. In these MODES, there is sufficient energy in the primary and secondary systems to warrant automatic initiation of ESF systems. Manual Initiation is also required in MODE 4 even though automatic actuation is not required. In this MODE, adequate time is available to manually actuate required components in the event of a DBA, but because of the large number of components actuated on a SI, actuation is simplified by the use of the manual actuation push buttons. Automatic actuation logic and actuation relays must be OPERABLE in MODE 4 to support system level manual initiation.

These Functions are not required to be OPERABLE in MODES 5 and 6 because there is adequate time for the operator to evaluate unit conditions and respond by manually starting individual systems, pumps, and other equipment to mitigate the consequences of an abnormal condition or accident. Unit pressure and temperature are very low and many ESF components are administratively locked out or otherwise prevented from actuating to prevent inadvertent overpressurization of unit systems.

c. Safety Injection-Containment Pressure-High

This signal provides protection against the following accidents:

- SLB inside containment; and
- LOCA.

Containment Pressure-High provides no input to any control functions. Thus, three OPERABLE channels are sufficient to satisfy protective requirements with a two-out-of-three logic. The transmitters and electronics are located outside of containment with the sensing lines passing through containment penetrations to sense the containment atmosphere in three different locations.

BASES

APPLICABLE SAFETY ANALYSES, LCO AND APPLICABILITY (continued)

Thus, the high pressure Function will not experience any adverse environmental conditions and the Allowable Value reflects only steady state instrument uncertainties.

Containment Pressure-High must be OPERABLE in MODES 1, 2, and 3 when there is sufficient energy in the primary and secondary systems to pressurize the containment following a pipe break. In MODES 4, 5, and 6, there is insufficient energy in the primary or secondary systems to pressurize the containment.

d. Safety Injection-Pressurizer Pressure-Low

This signal provides protection against the following accidents:

- Inadvertent opening of a steam generator (SG) relief or safety valve;
- SLB;
- A spectrum of rod cluster control assembly ejection accidents (rod ejection);
- Inadvertent opening of a pressurizer relief or safety valve;
- LOCAs; and
- SG Tube Rupture.

Pressurizer pressure provides both control and protection functions: input to the Pressurizer Pressure Control System, reactor trip, and SI. However, two independent PORV open signals must be present before a PORV can open. Therefore, a single pressure channel failing high will not fail a PORV open and trigger a depressurization/SI event. Additionally, in the event of a failed open spray valve, RCS depressurization would be slow enough to be recognized by the operator and mitigated through manual actions to close the spray valve and energize the pressurizer heaters prior to reaching saturated conditions in the RCS. Therefore, there would be no uncontrolled loss of RCS inventory and no need for boron injection. Therefore, only three protection channels are necessary to satisfy the protective requirements.

BASES

APPLICABLE SAFETY ANALYSES, LCO AND APPLICABILITY (continued)

This Function must be OPERABLE in MODES 1, 2, and 3 (above the Pressurizer Pressure interlock) to mitigate the consequences of an HELB inside containment. This signal may be manually blocked by the operator below the Pressurizer Pressure interlock. Automatic SI actuation below this pressure setpoint is then performed by the Containment Pressure-High signal.

This Function is not required to be OPERABLE in MODE 3 below the Pressurizer Pressure interlock. Other ESF functions are used to detect accident conditions and actuate the ESF systems in this MODE. In MODES 4, 5, and 6, this Function is not needed for accident detection and mitigation.

e. Safety Injection-Steam Line Pressure-Low

Steam Line Pressure-Low provides protection against the following accidents:

- SLB;
- Feed line break; and
- Inadvertent opening of an SG relief or an SG safety valve.

Steam Line Pressure-Low provides a signal for control of the main steam atmospheric steam dump valves. However, a failure in a steam line pressure channel will not create a control failure that would result in a low steamline pressure SI event. Thus, three OPERABLE channels on each steam line are sufficient to satisfy the protective requirements with a two-out-of-three logic on each steam line.

With the transmitters located in the fan rooms and in the fuel pool area, it is possible for them to experience adverse environmental conditions during a secondary side break. Therefore, the Allowable Value reflects both steady state and adverse environmental instrument uncertainties.

This Function is anticipatory in nature and has a lead/lag ratio of 12/2.

BASES

APPLICABLE SAFETY ANALYSES, LCO, AND APPLICABILITY (continued)

Steam Line Pressure-Low must be OPERABLE in MODES 1, 2, and 3 (above the Pressurizer Pressure interlock) when a secondary side break or stuck open valve could result in the rapid depressurization of the steam lines. This signal may be manually blocked by the operator below the Pressurizer Pressure interlock. This Function is not required to be OPERABLE in MODE 4, 5, or 6 because there is insufficient energy in the secondary side of the unit to cause an accident.

2. Containment Spray

Containment Spray provides three primary functions:

1. Lowers containment pressure and temperature after an HELB in containment;

2. Reduces the amount of radioactive iodine in the containment atmosphere; and

3. Adjusts the pH of the water in the containment recirculation sump after a large break LOCA.

These functions are necessary to:

- Ensure the pressure boundary integrity of the containment structure;

- Limit the release of radioactive iodine to the environment in the event of a failure of the containment structure; and

- Minimize corrosion of the components and systems inside containment following a LOCA.

The containment spray actuation signal starts the containment spray pumps and aligns the discharge of the pumps to the containment spray nozzle headers in the upper levels of containment. Water is initially drawn from the RWST by the containment spray pumps and mixed with a sodium hydroxide solution from the spray additive tank. When the RWST reaches the low low level setpoint, the spray pump suctions are shifted to the containment sump if continued containment spray is required. Containment spray is actuated automatically by Containment Pressure-High High.

BASES

APPLICABLE SAFETY ANALYSES, LCO, AND APPLICABILITY (continued)

a. Containment Spray-Manual Initiation

The operator can initiate containment spray at any time from the control room by simultaneously depressing two containment spray actuation pushbuttons. Because an inadvertent actuation of containment spray could have such serious consequences, two pushbuttons must be pushed simultaneously to initiate both trains of containment spray.

The LCO requires two channels to be OPERABLE. Each channel consists of one pushbutton and two sets of contacts, with one set of contacts in each train. Therefore an inoperable channel fails both trains of manual initiation.

b. Containment Spray-Automatic Actuation Logic and Actuation Relays

Automatic actuation logic and actuation relays consist of the same features and operate in the same manner as described for ESFAS Function 1.b. Manual and automatic initiation of containment spray must be OPERABLE in MODES 1, 2, and 3 when there is a potential for an accident to occur, and sufficient energy in the primary or secondary systems to pose a threat to containment integrity due to overpressure conditions. Manual initiation is also required in MODE 4, even though automatic actuation is not required. In this MODE, adequate time is available to manually actuate required components in the event of a DBA. However, because of the large number of components actuated on a containment spray, actuation is simplified by the use of the manual actuation push buttons. Automatic actuation logic and actuation relays must be OPERABLE in MODE 4 to support system level manual initiation. In MODES 5 and 6, there is insufficient energy in the primary and secondary systems to result in containment overpressure. In MODES 5 and 6, there is also adequate time for the operators to evaluate unit conditions and respond, to mitigate the consequences of abnormal conditions by manually starting individual components.

c. Containment Spray-Containment Pressure-High High

This signal provides protection against a LOCA or an SLB inside containment. The transmitters are located outside of containment with the sensing lines passing through containment penetrations to sense the containment atmosphere in three different locations. The transmitters and electronics are located

BASES

APPLICABLE SAFETY ANALYSES, LCO AND APPLICABILITY (continued)

outside of containment. Thus, they will not experience any adverse environmental conditions and the Trip Setpoint reflects only steady state instrument uncertainties.

This is one of the only Functions that requires the bistable output to energize to perform its required action. It is not desirable to have a loss of power actuate containment spray, since the consequences of an inadvertent actuation of containment spray could be serious.

The Containment Pressure-High High Function consists of two sets with three channels in each set. Each set is a two-out-of-three logic where the outputs are combined so that both sets tripped initiates Containment Spray. Since containment pressure is not used for control, this arrangement exceeds the minimum redundancy requirements. Additional redundancy is warranted because this Function is energize to trip. Containment Pressure-High High must be OPERABLE in MODES 1, 2, and 3 when there is sufficient energy in the primary and secondary sides to pressurize the containment following a pipe break. In MODES 4, 5, and 6, there is insufficient energy in the primary and secondary sides to pressurize the containment and reach the Containment Pressure-High High setpoints.

3. Containment Isolation

Containment Isolation provides isolation of the containment atmosphere from the environment. This Function is necessary to prevent or limit the release of radioactivity to the environment in the event of a large break LOCA.

Containment Isolation signals isolate all automatically isolable process lines, except component cooling water (CCW), main feedwater lines and main steam lines. The main feedwater and main steam lines are isolated by other functions because forced circulation cooling using the reactor coolant pumps (RCPs) and SGs is the preferred (but not required) method of decay heat removal. Since CCW is required to support RCP operation, not isolating CCW enhances unit safety by allowing operators to use forced RCS circulation to cool the unit. Isolating CCW may force the use of feed and bleed cooling, which could prove more difficult to control.

BASES

APPLICABLE SAFETY ANALYSES, LCO AND APPLICABILITY (continued)

a. Containment Isolation

(1) Containment Isolation-Manual Initiation

The LCO requires two channels to be OPERABLE. A channel consists of one pushbutton and two sets of contacts, with one set of contacts in each train.

E
RAI 3.3.2-2

Manual Containment Isolation is actuated by either of two switches in the control room. Either switch actuates both trains. Note that manual initiation of Containment Isolation also actuates Containment Ventilation Isolation.

(2) Containment Isolation-Automatic Actuation Logic and Actuation Relays

Automatic Actuation Logic and Actuation Relays consist of the same features and operate in the same manner as described for ESFAS Function 1.b.

Manual and automatic initiation of Containment Isolation must be OPERABLE in MODES 1, 2, and 3, when there is a potential for an accident to occur. Manual initiation is also required in MODE 4 even though automatic actuation is not required. In this MODE, adequate time is available to manually actuate required components in the event of a DBA, but because of the large number of components actuated on a Containment Isolation, actuation is simplified by the use of the manual actuation push buttons. Automatic actuation logic and actuation relays must be OPERABLE in MODE 4 to support system level manual initiation. In MODES 5 and 6, there is insufficient energy in the primary or secondary systems to pressurize the containment to require Containment Isolation. There also is adequate time for the operator to evaluate unit conditions and manually actuate individual isolation valves in response to abnormal or accident conditions.

(3) Containment Isolation-Safety Injection

Containment Isolation is also initiated by all Functions that initiate SI except Manual SI initiation. The Containment Isolation requirements for these Functions are the same as the requirements for their SI function. Therefore, the requirements are not repeated in Table 3.3.2-1. Instead, Function 1, SI, is referenced for all initiating Functions and requirements.

BASES

APPLICABLE SAFETY ANALYSES, LCO, AND APPLICABILITY (continued)

4. Steam Line Isolation

Isolation of the main steam lines provides protection in the event of an SLB inside or outside containment. Rapid isolation of the steam lines will limit the steam break accident to the blowdown from one SG, at most. For an SLB upstream of the main steam isolation valves (MSIVs), inside or outside of containment, closure of the MSIVs limits the accident to the blowdown from only the affected SG. For an SLB downstream of the MSIVs, closure of the MSIVs terminates the accident as soon as the steam lines depressurize. Steam Line Isolation also mitigates the effects of a feed line break and ensures a source of steam for the turbine driven AFW pump during a feed line break.

a. Steam Line Isolation-Manual Initiation

The LCO requires one channel per loop to be OPERABLE. A channel consists of the control switch and two sets of contacts, with one set of contacts in each train.

Manual initiation of Steam Line Isolation can be accomplished from the control room. There are two switches in the control room, one for each MSIV.

b. Steam Line Isolation-Automatic Actuation Logic and Actuation Relays

The LCO requires two trains to be OPERABLE. Actuation logic consists of two trains, with each train providing output to each MSIV through individual relays.

E
Errata #150

Manual and automatic initiation of steam line isolation must be OPERABLE in MODES 1, 2, and 3 when there is sufficient energy in the RCS and SGs to have an SLB or other accident. This could result in the release of significant quantities of energy and cause a cooldown of the primary system. The Steam Line Isolation Function is required in MODES 2 and 3 unless all MSIVs are closed and de-activated. In MODES 4, 5, and 6, there is insufficient energy in the RCS and SGs to experience an SLB or other accident releasing significant quantities of energy.

c. Steam Line Isolation-Containment Pressure-High High

This Function actuates closure of the MSIVs in the event of a LOCA or an SLB inside containment to maintain at least one unfaulted SG as a heat sink for the reactor, and to limit the mass and energy release to containment. The transmitters are

BASES

APPLICABLE SAFETY ANALYSES, LCO, AND APPLICABILITY (continued)

located outside containment with the sensing lines passing through containment penetrations to sense the containment atmosphere in three different locations. Containment Pressure-High High provides no input to any control functions. Thus, three OPERABLE channels are sufficient to satisfy protective requirements with two-out-of-three logic. The transmitters and electronics are located outside of containment. Thus, they will not experience any adverse environmental conditions, and the Allowable Value reflects only steady state instrument uncertainties.

Containment Pressure-High High must be OPERABLE in MODES 1, 2, and 3, when there is sufficient energy in the primary and secondary side to pressurize the containment following a pipe break. This would cause a significant increase in the containment pressure, thus allowing detection and closure of the MSIVs. The Steam Line Isolation Function remains OPERABLE in MODES 2 and 3 unless all MSIVs are closed and de-activated. In MODES 4, 5, and 6, there is not enough energy in the primary and secondary sides to pressurize the containment to the Containment Pressure-High High setpoint.

d. Steam Line Isolation-High Steam Flow Coincident With Safety Injection and Coincident With T_{avg}-Low

This Function provides closure of the MSIVs during an SLB or inadvertent opening of an SG relief or safety valve to maintain at least one unfaulted SG as a heat sink for the reactor, and to limit the mass and energy release to containment.

Two steam line flow channels per steam line are required OPERABLE for this Function. These are combined in a one-out-of-two logic to indicate high steam flow in one steam line. The steam flow transmitters provide control inputs, but the control function cannot cause the events that the function must protect against. Therefore, two channels are sufficient to satisfy redundancy requirements. The one-out-of-two configuration allows online testing because trip of one high steam flow channel is not sufficient to cause initiation.

E
RAI 3.3.2-2

The High Steam Flow Allowable Value is a ΔP corresponding to 20% of full steam flow at no load steam pressure.

BASES

APPLICABLE SAFETY ANALYSES, LCO, AND APPLICABILITY (continued)

With the transmitters (d/p cells) located inside containment, it is possible for them to experience adverse environmental conditions during an SLB event. Therefore, the Allowable Values reflect both steady state and adverse environmental instrument uncertainties.

The main steam line isolates only if the high steam flow signal occurs coincident with an SI and low RCS average temperature. The Main Steam Line Isolation Function requirements for the SI Functions are the same as the requirements for their SI function. Therefore, the requirements are not repeated in Table 3.3.2-1. Instead, Function 1, SI, is referenced for all initiating functions and requirements.

The T_{avg}-Low Function consists of four channels (two in each loop), providing input to both trains in a two-out-of-four logic configuration. Three channels of T_{avg} are required to be OPERABLE. The accidents that this Function protects against cause reduction of T_{avg} in the entire primary system. Therefore, the provision of three OPERABLE channels ensures no single random failure disables the T_{avg}-Low Function. The T_{avg} channels provide control inputs, but the control function cannot initiate events that the Function acts to mitigate. Therefore, additional channels are not required to address control protection interaction issues.

With the T_{avg} resistance temperature detectors (RTDs) located inside the containment, it is possible for them to experience adverse environmental conditions during an SLB event. Therefore, the Trip Setpoint reflects both steady state and adverse environmental instrumental uncertainties.

This Function must be OPERABLE in MODES 1 and 2, and in MODE 3, when a secondary side break or stuck open valve could result in rapid depressurization of the steam lines. The Steam Line Isolation Function is required to be OPERABLE in MODES 2 and 3 unless all MSIVs are closed and de-activated. This Function is not required to be OPERABLE in MODES 4, 5, and 6 because there is insufficient energy in the secondary side of the unit to have an accident.

e. Steam Line Isolation-High High Steam Flow Coincident With Safety Injection

This Function provides closure of the MSIVs during a steam line break (or inadvertent opening of a relief or safety valve) to maintain at least one unfaulted SG as a heat sink for the reactor, and to limit the mass and energy release to containment.

BASES

APPLICABLE SAFETY ANALYSES, LCO, AND APPLICABILITY (continued)

Two steam line flow channels per steam line are required to be OPERABLE for this Function. These are combined in a one-out-of-two logic to indicate high steam flow in one steam line. The steam flow transmitters provide control inputs, but the control function cannot cause the events that the Function must protect against. Therefore, two channels are sufficient to satisfy redundancy requirements.

E
RAI 3.3.2-2

The Allowable Value for high steam flow is a ΔP, corresponding to 120% of full steam flow at full steam pressure.

With the transmitters located inside containment, it is possible for them to experience adverse environmental conditions during an SLB event. Therefore, the Allowable Value reflects both steady state and adverse environmental instrument uncertainties.

The main steam lines isolate only if the high steam flow signal occurs coincident with an SI signal. The Main Steam Line Isolation Function requirements for the SI Functions are the same as the requirements for their SI function. Therefore, the requirements are not repeated in Table 3.3.2-1. Instead, Function 1, SI, is referenced for all initiating functions and requirements.

This Function must be OPERABLE in MODES 1, 2, and 3 when a secondary side break or stuck open valve could result in rapid depressurization of the steam lines unless all MSIVs are closed and de-activated. This Function is not required to be OPERABLE in MODES 4, 5, and 6 because there is insufficient energy in the secondary side of the unit to have an accident.

5. Feedwater Isolation

The primary function of the Feedwater Isolation signal is to stop the excessive flow of feedwater into the SGs. This Function is necessary to mitigate the effects of a high water level in the SGs, which could result in carryover of water into the steam lines and excessive cooldown of the primary system. The SG high water level is due to excessive feedwater flows.

The Function is actuated on an SI signal, or when the level in either SG exceeds the high setpoint.

BASES

APPLICABLE SAFETY ANALYSES, LCO, AND APPLICABILITY (continued)

An SI signal results in the following actions:

- MFW pumps trip (causes subsequent closure of the MFW pump discharge valves); and
- MFRVs and the bypass regulating valves close.

A SG Water Level-High in either SG results in the closure of the MFRVs and the bypass regulating valves.

a. Feedwater Isolation-Automatic Actuation Logic and Actuation Relays

Automatic Actuation Logic and Actuation Relays consist of the same features and operate in the same manner as described for ESFAS Function 1.b.

b. Feedwater Isolation-Steam Generator Water Level-High

This signal provides protection against excessive feedwater flow. The ESFAS SG water level instruments provide input to the SG Water Level Control System. If this input to the SG Water Level Control System fails low, it would cause a control action to open the Feedwater Control Valves for the affected SG. The remaining channels, in a two-out-of-two configuration, would be required to detect a high SG Water Level condition and initiate a Feedwater Isolation to prevent an overfill condition. Therefore this configuration does not meet the single failure criteria of Reference 1. However, justification for a two-out-of-three Feedwater Isolation-SG Water Level-High Function is provided in NUREG-1218, Reference 5.

The field setting for Feedwater Isolation-Steam Generator Water Level-High was developed outside of the setpoint methodology and has been provided by the NSSS supplier. No analytical value is assumed in the accident analysis for this function.

E
RAI 3.3.2-3

c. Feedwater Isolation-Safety Injection

Feedwater Isolation is also initiated by all Functions that initiate SI. The Feedwater Isolation Function requirements for these Functions are the same as the requirements for their SI function.

Therefore, the requirements are not repeated in Table 3.3.2-1. Instead Function 1, SI, is referenced for all initiating functions and requirements.

BASES

APPLICABLE SAFETY ANALYSES, LCO, AND APPLICABILITY (continued)

Feedwater Isolation Functions must be OPERABLE in MODES 1 and 2 and 3 except when all MFRVs, and associated bypass valves are closed and de-activated. In MODES 4, 5, and 6, the MFW System is not in service and this Function is not required to be OPERABLE.

6. Auxiliary Feedwater

The AFW System is designed to provide a secondary side heat sink for the reactor in the event that the MFW System is not available. The system has two motor driven pumps and a turbine driven pump, making it available during normal unit operation, during a loss of AC power, a loss of MFW, and during a Feedwater System pipe break. The normal source of water for the AFW System is the condensate storage tank (CST) (not safety related). Upon a low level in the CST, the operators can manually realign the pump suctions to the Service Water System, which is the safety related water source. The AFW System is aligned so that upon a pump start, flow is initiated to the respective SGs immediately.

a. Auxiliary Feedwater-Automatic Actuation Logic and Actuation Relays

Automatic actuation logic and actuation relays consist of the same features and operate in the same manner as described for ESFAS Function 1.b.

b. Auxiliary Feedwater-Steam Generator Water Level-Low Low

SG Water Level-Low Low provides protection against a loss of heat sink. A loss of MFW would result in a loss of SG water level. SG Water Level-Low Low in either SG will cause both motor driven pumps to start. The system is aligned so that upon start of the pumps, water immediately begins to flow to the SGs. SG Water Level-Low Low in both SGs will cause the turbine driven AFW pump to start.

With the transmitters (d/p cells) located inside containment and thus possibly experiencing adverse environmental conditions (feed line break), the Allowable Value reflects the inclusion of both steady state and adverse environmental instrument uncertainties.

BASES

APPLICABLE SAFETY ANALYSES, LCO, AND APPLICABILITY (continued)

c. Auxiliary Feedwater-Safety Injection

An SI signal starts the motor driven AFW pumps. The AFW initiation functions are the same as the requirements for their SI function. Therefore, the requirements are not repeated in Table 3.3.2-1. Instead, Function 1, SI, is referenced for all initiating functions and requirements.

Functions 6.a through 6.c must be OPERABLE in MODES 1, 2, and 3 to ensure that the SGs remain the heat sink for the reactor. SG Water Level-Low Low in any operating SG will cause the motor driven AFW pumps to start. The system is aligned so that upon a start of the pump, water immediately begins to flow to the SGs. SG Water Level-Low Low in both SGs will cause the turbine driven pump to start. These Functions do not have to be OPERABLE in MODES 5 and 6 because there is not enough heat being generated in the reactor to require the SGs as a heat sink. In MODE 4, AFW actuation does not need to be OPERABLE because either AFW or residual heat removal (RHR) will already be in operation to remove decay heat or sufficient time is available to manually place either system in operation.

d. Auxiliary Feedwater-Undervoltage Bus A01 and A02

E RAI 3.3.2-2

The LCO requires two channels per bus to be OPERABLE. A channel consists of an undervoltage relay and one set of associated contacts.

A loss of power on the A01 and A02 buses provides indication of a pending loss of both Main Feedwater pumps and the subsequent need for some method of decay heat removal. A loss of power to Buses A01 and A02 will start the turbine driven AFW pump to ensure that at least one SG contains enough water to serve as the heat sink for reactor decay heat and sensible heat removal following the reactor trip.

E Errata #160

Function 6.d must be OPERABLE in MODES 1 and 2. This ensures that at least one SG is provided with water to serve as the heat sink to remove reactor decay heat and sensible heat in the event of an accident. In MODES 3, 4, and 5, the MFW pumps may be normally shut down, and thus a pump trip is not indicative of a condition requiring automatic AFW initiation.

BASES

APPLICABLE SAFETY ANALYSES, LCO, AND APPLICABILITY (continued)

7. Condensate Isolation

The Condensate Isolation Function serves as a backup protection function in the event of a Main Steam Line Break inside containment with a failure of the Main Feedwater lines to isolate. An evaluation of IE Bulletin 80-04 showed that a single failure of a MFRV to close on a SI signal could allow feedwater addition to the faulted SG, leading to containment overpressure.

a. Containment Pressure-Condensate Isolation (CPCI)

The Condensate Isolation Function is actuated when containment pressure exceeds the high setpoint, and performs the following functions:

- Trips the condensate pumps; and
- Trips the heater drain pumps.

The Condensate Isolation Function must be OPERABLE in MODES 1, 2 and 3, except when all MFRVs and associated bypass valves are closed and de-activated. This Function is not required to be OPERABLE in MODES 4, 5 and 6, because there is insufficient energy in the secondary side of the unit to have an accident.

b. Condensate Isolation - Automatic Actuation Logic and Actuation Relays

Automatic Actuation logic and actuation relays consist of the same features and operate in the same manner as described for ESFAS Function 1.b.

8. Pressurizer Pressure Safety Injection Block

To allow some flexibility in unit operations, the Pressurizer Pressure SI Block is included as part of the ESFAS.

The block permits a normal unit cooldown and depressurization without actuation of SI. With two-out-of-three pressurizer pressure channels (discussed previously) less than the setpoint, the operator can manually block the Pressurizer Pressure-Low and Steam Line Pressure-Low SI signals. With two-out-of-three pressurizer pressure channels above the setpoint, the Pressurizer Pressure-Low and Steam Line Pressure-Low SI signals are automatically enabled. The operator can also enable these trips by use of the respective manual reset buttons. The Allowable Value

BASES

APPLICABLE SAFETY ANALYSES, LCO, AND APPLICABILITY (continued)

reflects only steady state instrument uncertainties.

This Function must be OPERABLE in MODES 1, 2, and 3 to allow automatic initiation of SI actuation on Pressurizer Pressure-Low or Steam Line Pressure-Low signals. This Function does not have to be OPERABLE in MODE 4, 5, or 6 because system pressure must already be below the setpoint for the requirements of the heatup and cooldown curves to be met.

The ESFAS instrumentation satisfies Criterion 3 of the NRC Policy Statement.

ACTIONS

A Note has been added in the ACTIONS to clarify the application of Completion Time rules. The Conditions of this Specification may be entered independently for each Function listed on Table 3.3.2-1.

In the event a channel's Trip Setpoint is found nonconservative with respect to the Allowable Value, or the transmitter, instrument Loop, signal processing electronics, or bistable is found inoperable, then all affected Functions provided by that channel must be declared inoperable and the LCO Condition(s) entered for the protection Function(s) affected. When the Required Channels in Table 3.3.2-1 are specified (e.g., on a per steam line, per loop, per SG, etc., basis), then the Condition may be entered separately for each steam line, loop, SG, etc., as appropriate.

When the number of inoperable channels in a trip function exceed those specified in one or other related Conditions associated with a trip function, then the unit is outside the safety analysis. Therefore, LCO 3.0.3 should be immediately entered if applicable in the current MODE of operation.

A.1

Condition A applies to all ESFAS protection functions.

Condition A addresses the situation where one or more channels or trains for one or more Functions are inoperable at the same time. The Required Action is to refer to Table 3.3.2-1 and to take the Required Actions for the protection functions affected. The Completion Times are those from the referenced Conditions and Required Actions.

BASES

ACTIONS (continued) B.1, B.2.1 and B.2.2

Condition B applies to manual initiation of:

- SI; and
- Containment Isolation.

RAI 3.3.2-2

If a channel is inoperable, 48 hours are allowed to return it to OPERABLE status. The specified Completion Time is reasonable considering that there are two automatic actuation trains and another manual initiation train OPERABLE for each Function, and the low probability of an event occurring during this interval. If the channel cannot be restored to OPERABLE status, the unit must be placed in a MODE in which the LCO does not apply. This is done by placing the unit in at least MODE 3 within an additional 6 hours (54 hours total time) and in MODE 5 within an additional 30 hours (84 hours total time). The allowable Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

C.1, C.2.1 and C.2.2

Condition C applies to the automatic actuation logic and actuation relays for the following functions:

- SI;
- Containment Spray; and
- Containment Isolation.

If one train is inoperable, 6 hours are allowed to restore the train to OPERABLE status. The specified Completion Time is reasonable considering that there is another train OPERABLE, and the low probability of an event occurring during this interval. If the train cannot be restored to OPERABLE status, the unit must be placed in a MODE in which the LCO does not apply. This is done by placing the unit in at least MODE 3 within an additional 6 hours (12 hours total time) and in MODE 5 within an additional 30 hours (42 hours total time). The Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

RAI 3.3.2-6

BASES

ACTIONS (continued) D.1, D.2.1 and D.2.2

Condition D applies to:

- Containment Pressure-High;
- Pressurizer Pressure-Low;
- Steam Line Pressure-Low;
- Containment Pressure-High High;
- High Steam Flow Coincident With Safety Injection Coincident With T_{avg}-Low;
- High High Steam Flow Coincident With Safety Injection; E RAI 3.3.2-2
- SG Water level-Low Low; and
- SG Water level-High.

If one channel is inoperable, 1 hour is allowed to restore the channel to OPERABLE status or to place it in the tripped condition. Placing the channel in the tripped condition is necessary to maintain a logic configuration that satisfies redundancy requirements. E RAI 3.3.2-5

Failure to restore the inoperable channel to OPERABLE status or place it in the tripped condition within 1 hour requires the unit be placed in MODE 3 within the following 6 hours and MODE 4 within the next 6 hours.

The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. In MODE 4, these Functions are no longer required OPERABLE.

E.1, E.2.1, and E.2.2 E RAI 3.3.2-2 RAI 3.3.2-6

Condition E applies to manual initiation of Containment Spray. If one or both channels are inoperable, 1 hour is allowed to return the inoperable channel(s) to OPERABLE status. The Completion Time of one hour is reasonable considering that there are OPERABLE automatic actuation functions credited to perform the safety function and the low probability of an event occurring during this interval. If the inoperable channel(s) cannot be restored to OPERABLE status, the unit must be placed in a MODE in which the LCO does not apply. This is done by placing the unit in at least MODE 3 within an additional 6 hours (7 hours total time)

BASES

ACTIONS (continued) and in MODE 5 within an additional 30 hours (37 hours total time). The allowable Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

E RAI 3.3.2-2

F.1, F.2.1, and F.2.2

Condition F applies to Manual Initiation of Steam Line Isolation.

If a channel is inoperable, 1 hour is allowed to return it to an OPERABLE status. The Completion Time of one hour is reasonable considering the low probability of an event occurring during this interval. If the Function cannot be returned to OPERABLE status, the unit must be placed in MODE 3 within the next 6 hours and MODE 4 within the following 6 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power in an orderly manner and without challenging unit systems. In MODE 4, the unit does not have any analyzed transients or conditions that require the explicit use of the protection functions noted above.

G.1, G.2.1 and G.2.2

E RAI 3.3.2-2

Condition G applies to the automatic actuation logic and actuation relays for the Steam Line Isolation, Feedwater Isolation, Condensate Isolation and AFW actuation Functions.

If one train is inoperable, 6 hours are allowed to restore the train to OPERABLE status. The Completion Time for restoring a train to OPERABLE status is reasonable considering that there is another train OPERABLE, and the low probability of an event occurring during this interval. If the train cannot be returned to OPERABLE status, the unit must be brought to MODE 3 within the next 6 hours and MODE 4 within the following 6 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. Placing the unit in MODE 4 removes all requirements for OPERABILITY of the protection channels and actuation functions. In this MODE, the unit does not have analyzed transients or conditions that require the explicit use of the protection functions noted above.

H.1 and H.2

E RAI 3.3.2-2 RAI 3.3.2-6

Condition H applies to the Undervoltage Bus A01 and A02 Function.

If one channel is inoperable, 6 hours are allowed to restore one channel to OPERABLE status or place it in the tripped condition. If placed in the tripped condition, this Function is then in a partial trip condition where

BASES

ACTIONS (continued) one-out-of-two logic will result in actuation. The 6 hours to place the channel in the tripped condition is necessary due to plant design requiring maintenance personnel to effect the trip of the channel outside of the control room. Failure to restore the inoperable channel to OPERABLE status or place it in the tripped condition within 6 hours requires the unit to be placed in MODE 3 within the following 6 hours. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging unit systems. In MODE 3, this Function is no longer required OPERABLE.

E
RAI 3.3.2-5

E
RAI 3.3.2-5
RAI 3.3.2-6
Errata #160

I.1, I.2.1 and I.2.2

Condition I applies to the Pressurizer Pressure SI Block.

With one or more channels inoperable, the operator must verify that the interlock is in the required state for the existing unit condition. This action manually accomplishes the function of the block. Determination must be made within 1 hour. The 1 hour Completion Time is equal to the time allowed by LCO 3.0.3 to initiate shutdown actions in the event of a complete loss of ESFAS function. If the block is not in the required state (or placed in the required state) for the existing unit condition, the unit must be placed in MODE 3 within the next 6 hours and MODE 4 within the following 6 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. Placing the unit in MODE 4 removes all requirements for OPERABILITY of the Pressurizer Pressure SI block.

SURVEILLANCE REQUIREMENTS The SRs for each ESFAS Function are identified by the SRs column of Table 3.3.2-1.

A Note has been added to the SR Table to clarify that Table 3.3.2-1 determines which SRs apply to which ESFAS Functions.

Note that each channel of process protection supplies both trains of the ESFAS. When testing channel I, train A and train B must be examined. Similarly, train A and train B must be examined when testing channel II, channel III, and channel IV (if applicable). The CHANNEL CALIBRATION and COTs are performed in a manner that is consistent with the assumptions used in analytically calculating the required channel accuracies.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.2.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the two instrument channels could be an indication of excessive instrument drift in one of the channels or of something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the unit staff, based on a combination of the channel instrument uncertainties, including indication and reliability. If a channel is outside the criteria, it may be an indication that the sensor or the signal processing equipment has drifted outside its limit.

The Frequency is based on operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the LCO required channels.

SR 3.3.2.2

SR 3.3.2.2 is the performance of an ACTUATION LOGIC TEST on all ESFAS Automatic Actuation Logic every 31 days on a STAGGERED TEST BASIS. This test includes the application of various simulated or actual input combinations in conjunction with each possible interlock state and verification of the required logic output. The Frequency of every 31 days on a STAGGERED TEST BASIS is adequate. It is based on industry operating experience, considering instrument reliability and operating history data.

SR 3.3.2.3

SR 3.3.2.3 is the performance of a COT.

A COT is performed on each required channel to ensure the entire channel will perform the intended Function. Setpoints must be found within the Allowable Values specified in Table 3.3.2-1.

The difference between the current "as found" values and the previous test "as left" values must be consistent with the drift allowance used in

BASES

SURVEILLANCE REQUIREMENTS (continued)

the setpoint methodology. The setpoint shall be left set consistent with the assumptions of the current unit specific setpoint methodology.

The "as found" and "as left" values must also be recorded and reviewed for consistency with the assumptions of the surveillance interval extension analysis (Ref. 4) when applicable.

The Frequency of 92 days is justified in Reference 4.

SR 3.3.2.4

SR 3.3.2.4 is the performance of a MASTER RELAY TEST. The MASTER RELAY TEST is the energizing of the master relay and verifying contact operation. This test is performed every 18 months.

SR 3.3.2.5

SR 3.3.2.5 is the performance of a SLAVE RELAY TEST. The SLAVE RELAY TEST is the energizing of the slave relays. Contact operation is verified in one of two ways. Actuation equipment that may be operated in the design mitigation MODE is either allowed to function, or is placed in a condition where the relay contact operation can be verified without operation of the equipment. This test is performed every 18 months.

SR 3.3.2.6

SR 3.3.2.6 is the performance of a TADOT every 31 days. This test is a check of the Undervoltage Bus A01 and A02 Function.

The Frequency is adequate. It is based on industry operating experience, considering instrument reliability and operating history data.

SR 3.3.2.7

SR 3.3.2.7 is the performance of a TADOT. This test is a check of the Manual Actuation Functions. It is performed every 18 months. The Frequency is adequate, based on industry operating experience and is consistent with the typical refueling cycle.

Errata #160

SR 3.3.2.8

SR 3.3.2.8 is the performance of a CHANNEL CALIBRATION.

A CHANNEL CALIBRATION is performed every 18 months, or approximately at every refueling. CHANNEL CALIBRATION is a complete check of the instrument loop, including the sensor. The test

BASES

SURVEILLANCE REQUIREMENTS (continued)

verifies that the channel responds to measured parameter within the necessary range and accuracy.

CHANNEL CALIBRATIONS must be performed consistent with the assumptions of the setpoint methodology. The difference between the current "as found" values and the previous test "as left" values must be consistent with the drift allowance used in the setpoint methodology.

The Frequency of 18 months is based on the assumption of an 18 month calibration interval in the determination of the magnitude of equipment drift in the setpoint methodology.

This SR is modified by a Note stating that this test should include verification that the time constants are adjusted to the prescribed values where applicable.

REFERENCES

1. FSAR, Chapter 14.
2. IEEE-279-1968.
3. 10 CFR 50.49.
4. DGI-01, Instrument Setpoint Methodology.
5. NUREG-1218, April 1988.

E
RAI 3.3.2-1
RAI 3.3.2-5
RAI 3.3.2-6

Description of Changes - NUREG-1431 Section 3.03.03

15-Mar-01

DOC Number	DOC Text

A.01
Rev. A

In the conversion of Point Beach current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted which do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the Standard Technical Specifications, Westinghouse Plants, NUREG-1431, Revision 1 (i.e., Improved Standard Technical Specifications (ISTS)).

CTS:	ITS:
15.03.05 T 15.03.05-05 04	LCO 3.03.03 COND E LCO 3.03.03 COND E RA E.1
15.03.05 T 15.03.05-05 07	LCO 3.03.03 COND C LCO 3.03.03 COND C RA C.1 LCO 3.03.03 COND E LCO 3.03.03 COND E RA E.1 LCO 3.03.03 COND G LCO 3.03.03 COND G RA G.1 LCO 3.03.03 T 3.03.03-1 13
15.03.05 T 15.03.05-05 09	LCO 3.03.03 COND E LCO 3.03.03 COND E RA E.1
15.03.05 T 15.03.05-05 10	LCO 3.03.03 COND D LCO 3.03.03 COND D RA D.1 LCO 3.03.03 COND E LCO 3.03.03 COND E RA E.1
15.03.05 T 15.03.05-05 10*	LCO 3.03.03 COND A LCO 3.03.03 COND A RA A.1
15.03.05 T 15.03.05-05 11	LCO 3.03.03 COND E LCO 3.03.03 COND E RA E.1
15.03.05 T 15.03.05-05 12	LCO 3.03.03 COND E LCO 3.03.03 COND E RA E.1
15.03.05 T 15.03.05-05 13	LCO 3.03.03 COND E LCO 3.03.03 COND E RA E.1 LCO 3.03.03 T 3.03.03-1 20 LCO 3.03.03 T 3.03.03-1 21 LCO 3.03.03 T 3.03.03-1 22 LCO 3.03.03 T 3.03.03-1 23
15.03.05 T 15.03.05-05 15	LCO 3.03.03 COND E LCO 3.03.03 COND E RA E.1
15.03.05 T 15.03.05-05 16	LCO 3.03.03 COND E LCO 3.03.03 COND E RA E.1

Description of Changes - NUREG-1431 Section 3.03.03

15-Mar-01

DOC Number	DOC Text	
	15.03.05 T 15.03.05-05 17	LCO 3.03.03 COND E LCO 3.03.03 COND E RA E.1
	15.03.05 T 15.03.05-05 18	LCO 3.03.03 COND E LCO 3.03.03 COND E RA E.1
	15.03.05 T 15.03.05-05 19	LCO 3.03.03 COND E LCO 3.03.03 COND E RA E.1
	15.03.05 T 15.03.05-05 20	LCO 3.03.03 COND E LCO 3.03.03 COND E RA E.1
	15.03.05 T 15.03.05-05 21	LCO 3.03.03 COND E LCO 3.03.03 COND E RA E.1
	15.03.05 T 15.03.05-05 22	LCO 3.03.03 COND E LCO 3.03.03 COND E RA E.1
	15.03.05 T 15.03.05-05 23	LCO 3.03.03 COND E LCO 3.03.03 COND E RA E.1
	15.03.05 T 15.03.05-05 24	LCO 3.03.03 COND E LCO 3.03.03 COND E RA E.1
	15.03.05 T 15.03.05-05 25	LCO 3.03.03 COND E LCO 3.03.03 COND E RA E.1
	15.03.05 T 15.03.05-05 26	LCO 3.03.03 COND E LCO 3.03.03 COND E RA E.1
	15.03.05 T 15.03.05-05 27	LCO 3.03.03 COND E LCO 3.03.03 COND E RA E.1
	15.03.05 T 15.03.05-05 28	LCO 3.03.03 COND C LCO 3.03.03 COND C RA C.1 LCO 3.03.03 COND E LCO 3.03.03 COND E RA E.1
	15.04.01 T 15.04.01-01 06	SR 3.03.03.03
	15.04.01 T 15.04.01-01 08	SR 3.03.03.03
	15.04.01 T 15.04.01-01 10	SR 3.03.03.03
	15.04.01 T 15.04.01-01 20	SR 3.03.03.03
	15.04.01 T 15.04.01-01 24	SR 3.03.03.03
	15.04.01 T 15.04.01-01 25	SR 3.03.03.01 SR 3.03.03.03
	15.04.01 T 15.04.01-01 25 (14)	SR 3.03.03.03 NOTE
	15.04.01 T 15.04.01-01 26.A	SR 3.03.03.02
	15.04.01 T 15.04.01-01 26.B	SR 3.03.03.03
	15.04.01 T 15.04.01-01 27	SR 3.03.03.03

DOC Number	DOC Text	
	15.04.01 T 15.04.01-01 28	SR 3.03.03.01 SR 3.03.03.03
	15.04.01 T 15.04.01-01 31	SR 3.03.03.01 SR 3.03.03.03
	15.04.01 T 15.04.01-01 37	SR 3.03.03.01 SR 3.03.03.03
	15.04.01 T 15.04.01-01 38	SR 3.03.03.03
	15.04.01 T 15.04.01-01 41	SR 3.03.03.01 SR 3.03.03.03
	15.04.01 T 15.04.01-01 NOTE (14)	SR 3.03.03.03 NOTE
	NEW	LCO 3.03.03 COND NOTE 2

A.02
Rev. A

CTS Table 15.3.5-5 is modified by a Note stating the requirements in this table only refer to the portions of the channels required for PAM instrumentation and also references the FSAR for applicable channels. This note is not being retained in ITS. Reference to the FSAR in this manner does not establish a regulatory requirement. It is unnecessary to provide references in the Technical Specifications, references when necessary are provided in the Bases of the ITS. Therefore deletion of this reference is administrative in nature.

CTS:	ITS:
15.03.05 T 15.03.05-05 NOTE	N/A

A.03
Rev. A

CTS Table 15.3.5-5, item #28, Containment Isolation Position Indication, requires one channel to be operable. Proposed ITS LCO 3.3.3, Table 3.3.3-1, item #12, Containment Isolation Valve Position, requires two channels per penetration flowpath. This requirement is modified by Notes (a) and (b). Note (a) exempts the requirement for isolation valves whose associated penetration is isolated by at least one closed and de-activated automatic valve, closed manual valve, blind flange or check valve with flow through the valve secured. Note (b) stipulates only one channel is required for penetration flowpaths with only one installed control room indication channel. These changes do not result in a relaxation of the current requirements, nor do they impose additional restrictions on unit operation. These changes are being made consistent with NUREG-1431, to clarify the application of this requirement to actual plant design and are therefore administrative in nature.

CTS:	ITS:
15.03.05 T 15.03.05-05 28	LCO 3.03.03 T 3.03.03-1 12
NEW	LCO 3.03.03 T 3.03.03-1 12 NOTE (a) LCO 3.03.03 T 3.03.03-1 12 NOTE (b) LCO 3.03.03 T 3.03.03-1 FOOTNOTE A LCO 3.03.03 T 3.03.03-1 FOOTNOTE B

Description of Changes - NUREG-1431 Section 3.03.03

15-Mar-01

DOC Number	DOC Text

A.04
Rev. A

CTS Table 15.4.1-1, Note (1) has been deleted. Note (1) establishes that during periods of refueling shutdown, various surveillances are not required to be performed, but must be performed prior to criticality, if not performed during the previous surveillance period. This Note is no longer required with the adoption of ITS SR 3.0.1 and SR 3.0.4. SR 3.0.1 states surveillance requirements shall be met during the MODES in the applicability for individual LCOs. SR 3.0.4 states entry into a MODE in the applicability of an LCO shall not be made unless the LCO's surveillances have been met within their specified Frequency. Therefore the concept of CTS Table 15.4.1-1, Note (1) has been retained in ITS and its deletion is administrative.

CTS:	ITS:
15.04.01 T 15.04.01-01 06 (1)	N/A
15.04.01 T 15.04.01-01 08 (1)	N/A
15.04.01 T 15.04.01-01 24 (1)	N/A
15.04.01 T 15.04.01-01 25 (1)	N/A
15.04.01 T 15.04.01-01 NOTE (1)	N/A

Description of Changes - NUREG-1431 Section 3.03.03

15-Mar-01

DOC Number	DOC Text

A.05
Rev. A

The entries in the "Plant Conditions When Required" column of CTS Table 15.4.1-1, for items #6, 8,10, 20, 24-28, 31, 37, 38, 40 and 41, have been changed from "ALL" to "MODES 1, 2, 3" to indicate the operational conditions under which the indications are required to be operable. This change does not impose additional requirements, nor does it result in the relaxation of current requirements. Per ITS SR 3.0.1, "SRs shall be met during the MODES or other specified conditions in the Applicability for individual LCOs, unless otherwise stated in the SR." Therefore, the above SRs are required to be met during the MODES in the Applicability specified for LCO 3.3.3, i.e., MODES 1, 2, 3. This change is administrative and implements the NUREG-1431 concept of MODES to the PAM instrumentation.

CTS:	ITS:
15.04.01 T 15.04.01-01 06	LCO 3.03.03 T 3.03.03-1 15
15.04.01 T 15.04.01-01 08	LCO 3.03.03 T 3.03.03-1 17
15.04.01 T 15.04.01-01 10	LCO 3.03.03 T 3.03.03-1 18
15.04.01 T 15.04.01-01 20	LCO 3.03.03 T 3.03.03-1 24
15.04.01 T 15.04.01-01 24	LCO 3.03.03 T 3.03.03-1 19
15.04.01 T 15.04.01-01 25	LCO 3.03.03 T 3.03.03-1 13
15.04.01 T 15.04.01-01 27	LCO 3.03.03 T 3.03.03-1 09 LCO 3.03.03 T 3.03.03-1 10 LCO 3.03.03 T 3.03.03-1 11
15.04.01 T 15.04.01-01 28	LCO 3.03.03 T 3.03.03-1 08
15.04.01 T 15.04.01-01 31	LCO 3.03.03 T 3.03.03-1 20 LCO 3.03.03 T 3.03.03-1 21 LCO 3.03.03 T 3.03.03-1 22 LCO 3.03.03 T 3.03.03-1 23
15.04.01 T 15.04.01-01 37	LCO 3.03.03 T 3.03.03-1 06 LCO 3.03.03 T 3.03.03-1 07
15.04.01 T 15.04.01-01 38	LCO 3.03.03 T 3.03.03-1 25
15.04.01 T 15.04.01-01 41	LCO 3.03.03 T 3.03.03-1 01

A.06
Rev. A

CTS 15.3.5.D, is revised by adopting the statement "LCO 3.0.4 is not applicable." As a result, a MODE change is allowed when the required PAM Instrumentation is inoperable. Current requirements do not contain a provision that disallows changes in plant operating conditions when the requirements of an LCO are not met. Therefore, adopting this statement is an administrative change and does not result in a reduction in the margin of safety.

CTS:	ITS:
NEW	LCO 3.03.03 COND NOTE 1

Description of Changes - NUREG-1431 Section 3.03.03

15-Mar-01

DOC Number	DOC Text
A.07 Rev. A	CTS Table 15.4.1-1, item 31, In-Core Thermocouples, Calibration surveillance requirement is modified by Note (14). This Note stipulates that the Calibration is to be a verification of response to a source. The proposed ITS definition of CHANNEL CALIBRATION states, "Calibration of instrument channels with resistance temperature detectors (RTD) or thermocouple sensors may consist of an inplace qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel." With the adoption of this definition in ITS, Note (14) is no longer required to modify the calibration surveillance requirement for the In-Core Thermocouples, and its deletion is administrative.

CTS:	ITS:
15.04.01 T 15.04.01-01 31 (14)	N/A

L.01 Rev. A	CTS 15.3.5.D requires the Post Accident Monitoring Instrumentation to be OPERABLE when the unit is not in the cold or refueling shutdown conditions. CTS 15.1.g states cold shutdown is the condition when the reactor has a shutdown margin of at least 1 % delta k/k and reactor coolant temperature is less than or equal to 200 F. Refueling shutdown is the condition when the reactor is subcritical by at least 5 % delta k/k and Tavg is less than or equal to 140 F. Proposed ITS LCO 3.3.3, has an applicability of MODES 1, 2 and 3. This covers the range from reactor critical above 5% RTP to subcritical with Tavg greater than or equal to 350 F. Therefore this results in a reduction in the applicability from greater than 200 F to greater than or equal to 350 F. This change is acceptable because the PAM instrumentation measures variables related to the diagnosis and pre-planned actions required to mitigate DBAs. The applicable DBAs are assumed to occur in MODES 1, 2 and 3. In MODES 4, 5, and 6 unit conditions are such that the likelihood of an event that would require PAM instrumentation is low; therefore the PAM instrumentation is not required to be OPERABLE in these MODES.

CTS:	ITS:
15.03.05.D	LCO 3.03.03

Description of Changes - NUREG-1431 Section 3.03.03

15-Mar-01

DOC Number	DOC Text

L.02
Rev. A

CTS Table 15.3.5-5, items # 1, 2, 3, 5, 8, 14, PORV Position Indicator, PORV Block Valve Position Indicator, Safety Valve Position Indicator, AFW Pump Discharge Flowrate, Containment Sump Level (Sump A), and Main Steam Line Radiation, and CTS Table 15.4.1-1, items #36-03 and 36-04, Radiation Monitoring System - RE-231A/B Steam Line Release Monitors are not being retained in ITS, because they are not identified as Type A or Category I in the PBNP Regulatory Guide 1.97 analyses. Not retaining the variables listed above in ITS is less restrictive, but is acceptable because it does not result in a reduction in the margin of safety.

CTS:	ITS:
15.03.05 T 15.03.05-05 01	N/A
15.03.05 T 15.03.05-05 02	N/A
15.03.05 T 15.03.05-05 03	N/A
15.03.05 T 15.03.05-05 05	N/A
15.03.05 T 15.03.05-05 05#	N/A
15.03.05 T 15.03.05-05 08	N/A
15.03.05 T 15.03.05-05 14	N/A
15.04.01 T 15.04.01-01 36-03	N/A
15.04.01 T 15.04.01-01 36-04	N/A
15.04.01 T 15.04.01-01 40	N/A

DOC Number	DOC Text

L.03
Rev. E

The operator actions of CTS Table 15.3.5-5, items # 4, 6, 9, 11, 12, 13 and 15-27, require operability be restored within 48 hours, if the minimum number of operable channels is not met. Proposed ITS LCO 3.3.3 Condition C is entered when two required channels are inoperable. Required Action C.1 requires restoration of one channel to operable status in 7 days. This relaxation in requirements is less restrictive, but is acceptable because of the low probability of an event requiring PAM instrumentation operation and the availability of alternate means to obtain the required information.

CTS:	ITS:
15.03.05 T 15.03.05-05 04	LCO 3.03.03 COND C RA C.1
15.03.05 T 15.03.05-05 06	LCO 3.03.03 COND C RA C.1
15.03.05 T 15.03.05-05 09	LCO 3.03.03 COND C RA C.1
15.03.05 T 15.03.05-05 11	LCO 3.03.03 COND C RA C.1
15.03.05 T 15.03.05-05 12	LCO 3.03.03 COND C RA C.1
15.03.05 T 15.03.05-05 13	LCO 3.03.03 COND C RA C.1
15.03.05 T 15.03.05-05 15	LCO 3.03.03 COND C RA C.1
15.03.05 T 15.03.05-05 16	LCO 3.03.03 COND C RA C.1
15.03.05 T 15.03.05-05 17	LCO 3.03.03 COND C RA C.1
15.03.05 T 15.03.05-05 18	LCO 3.03.03 COND C RA C.1
15.03.05 T 15.03.05-05 19	LCO 3.03.03 COND C RA C.1
15.03.05 T 15.03.05-05 20	LCO 3.03.03 COND C RA C.1
15.03.05 T 15.03.05-05 21	LCO 3.03.03 COND C RA C.1
15.03.05 T 15.03.05-05 22	LCO 3.03.03 COND C RA C.1
15.03.05 T 15.03.05-05 23	LCO 3.03.03 COND C RA C.1
15.03.05 T 15.03.05-05 24	LCO 3.03.03 COND C RA C.1
15.03.05 T 15.03.05-05 25	LCO 3.03.03 COND C RA C.1
15.03.05 T 15.03.05-05 26	LCO 3.03.03 COND C RA C.1
15.03.05 T 15.03.05-05 27	LCO 3.03.03 COND C RA C.1

L.04
Rev. E

Not used.

CTS:	ITS:
N/A	N/A

DOC Number	DOC Text

L.05
Rev. A

Operator Action for CTS Table 15.3.5-5, item # 7, Containment High Range Radiation, requires one or both inoperable channel(s) be restored in 7 days, or prepare a special report to be submitted within 30 days. Proposed ITS LCO 3.3.3, Condition A requires restoration of one required channel in 30 days, or per Condition B, submit a report outlining the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status. Proposed ITS LCO 3.3.3, Condition C requires restoration of one channel in 7 days when both channels are inoperable, or per Condition G, submit a report outlining the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status.

This change results in a relaxation of the current requirements. This change is acceptable based on the passive nature of the instrument (no required automatic action), the low probability of an event requiring PAM instrumentation and the alternate means of monitoring the parameter. The alternate means must be established to utilize the provisions of the proposed actions.

CTS:	ITS:
15.03.05 T 15.03.05-05 07	LCO 3.03.03 COND A
	LCO 3.03.03 COND A RA A.1
	LCO 3.03.03 COND B
	LCO 3.03.03 COND B RA B.1

L.06
Rev. E

CTS Table 15.3.5-5, item #10, Containment Hydrogen Concentration, is modified by Note *. This note states that with only one hydrogen monitor operable, restore a hydrogen monitor with an independent power supply within 30 days, or place the unit in hot shutdown within 6 hours. Proposed ITS LCO 3.3.3, Condition A requires restoration of the inoperable channel in 30 days, or per Condition B, submit a report in accordance with LCO 5.6.6, outlining the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status. This results in a relaxation of the requirements, but is acceptable based on the remaining operable channel and the passive nature of the instrument (no required automatic action). The requirement for hydrogen monitors with independent power supplies has been retained by Note (C), which modifies ITS Table 3.3.3-1, Function 14.

CTS:	ITS:
15.03.05 T 15.03.05-05 10*	LCO 3.03.03 COND B
	LCO 3.03.03 COND B RA B.1

Description of Changes - NUREG-1431 Section 3.03.03

15-Mar-01

DOC Number	DOC Text

L.07
Rev. A

The operator actions of CTS Table 15.3.5-5, item #28, Containment Isolation Position Indication, require an inoperable containment isolation valve shut position indication be restored in 7 days or close the valve or be in hot shutdown within the next 12 hours. Proposed ITS LCO 3.3.3, Condition A, is entered if one required channel is inoperable. Required Action A.1 requires restoration of the channel in 30 days, or per Condition B, submit a report in accordance with LCO 5.6.6, outlining the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status. The proposed actions to allow 30 days to restore the inoperable channel to OPERABLE status (instead of the current 7 day requirement) and the requirement to submit a report (in lieu of the shutdown requirements) are acceptable based on the low probability of an event requiring PAM instrumentation and the alternate means of monitoring the parameter. The alternate means must be established to utilize the provisions of the proposed actions.

CTS:	ITS:
15.03.05 T 15.03.05-05 28	LCO 3.03.03 COND A
	LCO 3.03.03 COND A RA A.1
	LCO 3.03.03 COND B
	LCO 3.03.03 COND B RA B.1

L.08
Rev. A

The frequency of the Channel Check surveillance requirement for the following PAM instrumentation has been changed from Shiftly or Daily to Monthly (31 Days): Pressurizer Water Level; SG Water Level; SG Pressure; CST Level; Containment Hydrogen Monitor; and Containment Pressure. This change has been made to conform to NUREG-1431 and is consistent with the Channel Checks currently performed on other PAM instrumentation. The proposed frequency of 31 Days is adequate. The Channel Check supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the LCO required channels.

CTS:	ITS:
15.04.01 T 15.04.01-01 06	SR 3.03.03.01
15.04.01 T 15.04.01-01 08	SR 3.03.03.01
15.04.01 T 15.04.01-01 10	SR 3.03.03.01
15.04.01 T 15.04.01-01 24	SR 3.03.03.01
15.04.01 T 15.04.01-01 26.A	SR 3.03.03.01
15.04.01 T 15.04.01-01 26.B	SR 3.03.03.01
15.04.01 T 15.04.01-01 27	SR 3.03.03.01

L.09
Rev. A

CTS requires the Hydrogen Monitor Gas Calibration be performed using 2% and 6% sample gas. This information is a detail which is not necessary to describe the actual regulatory requirement, and is therefore moved to the bases. This change is less restrictive, but is acceptable because the details are not necessary to provide adequate protection of the public health and safety, and the ITS still retains the requirement to perform the test.

CTS:	ITS:
15.04.01 T 15.04.01-01 26.A (15)	N/A

Description of Changes - NUREG-1431 Section 3.03.03

15-Mar-01

DOC Number	DOC Text

LA.01
Rev. A

The information contained in CTS Table 15.3.5-5, "Total No. of Channels" column contains details of design which are not directly pertinent to describe the actual regulatory requirement. These details are not necessary to provide adequate protection of the public health and safety. This information has been moved to the FSAR. Changes to the FSAR will be controlled in accordance with the 10 CFR 50.59 process.

CTS:	ITS:
15.03.05 T 15.03.05-05 04	FSAR
15.03.05 T 15.03.05-05 06	FSAR
15.03.05 T 15.03.05-05 07	FSAR
15.03.05 T 15.03.05-05 09	FSAR
15.03.05 T 15.03.05-05 10	FSAR
15.03.05 T 15.03.05-05 11	FSAR
15.03.05 T 15.03.05-05 12	FSAR
15.03.05 T 15.03.05-05 13	FSAR
15.03.05 T 15.03.05-05 15	FSAR
15.03.05 T 15.03.05-05 16	FSAR
15.03.05 T 15.03.05-05 17	FSAR
15.03.05 T 15.03.05-05 18	FSAR
15.03.05 T 15.03.05-05 19	FSAR
15.03.05 T 15.03.05-05 20	FSAR
15.03.05 T 15.03.05-05 21	FSAR
15.03.05 T 15.03.05-05 22	FSAR
15.03.05 T 15.03.05-05 23	FSAR
15.03.05 T 15.03.05-05 24	FSAR
15.03.05 T 15.03.05-05 25	FSAR
15.03.05 T 15.03.05-05 26	FSAR
15.03.05 T 15.03.05-05 27	FSAR
15.03.05 T 15.03.05-05 28	FSAR

DOC Number	DOC Text

M.01
Rev. E

CTS Table 15.3.5-5, "Minimum Operable Channels" column is changed to ITS Table 3.3.3-1, "Required Channels" column. Additionally, the number of required channels for CTS Table 15.3.5-5, items 4, 6, 9-12, and 15-27 have been increased to two channels for each indication. To facilitate the increase in the number of required channels, required actions have been adopted, directing the restoration of an inoperable channel within 30 days. If the channel cannot be restored in 30 days, a report shall be submitted outlining the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status. This action allows continued operation, provided an adequate alternate means of monitoring the parameter is justified. This change imposes additional requirements on unit operation and is more restrictive. This change is necessary to ensure no single failure prevents operators from getting the information necessary for them to determine the safety status of the unit, and to bring the unit to and maintain it in a safe condition following an accident.

CTS:	ITS:
15.03.05 T 15.03.05-05 04	LCO 3.03.03 COND A LCO 3.03.03 COND A RA A.1 LCO 3.03.03 COND B LCO 3.03.03 COND B RA B.1 LCO 3.03.03 T 3.03.03-1 01
15.03.05 T 15.03.05-05 06	LCO 3.03.03 COND A LCO 3.03.03 COND A RA A.1 LCO 3.03.03 COND B LCO 3.03.03 COND B RA B.1 LCO 3.03.03 T 3.03.03-1 24
15.03.05 T 15.03.05-05 09	LCO 3.03.03 COND A LCO 3.03.03 COND A RA A.1 LCO 3.03.03 COND B LCO 3.03.03 COND B RA B.1 LCO 3.03.03 T 3.03.03-1 08
15.03.05 T 15.03.05-05 10	LCO 3.03.03 T 3.03.03-1 14
15.03.05 T 15.03.05-05 11	LCO 3.03.03 COND A LCO 3.03.03 COND A RA A.1 LCO 3.03.03 COND B LCO 3.03.03 COND B RA B.1 LCO 3.03.03 T 3.03.03-1 06
15.03.05 T 15.03.05-05 12	LCO 3.03.03 COND A LCO 3.03.03 COND A RA A.1 LCO 3.03.03 COND B LCO 3.03.03 COND B RA B.1 LCO 3.03.03 T 3.03.03-1 07

Description of Changes - NUREG-1431 Section 3.03.03

15-Mar-01

DOC Number	DOC Text
15.03.05 T 15.03.05-05 13	LCO 3.03.03 COND A LCO 3.03.03 COND A RA A.1 LCO 3.03.03 COND B LCO 3.03.03 COND B RA B.1
15.03.05 T 15.03.05-05 15	LCO 3.03.03 COND A LCO 3.03.03 COND A RA A.1 LCO 3.03.03 COND B LCO 3.03.03 COND B RA B.1 LCO 3.03.03 T 3.03.03-1 25
15.03.05 T 15.03.05-05 16	LCO 3.03.03 COND A LCO 3.03.03 COND A RA A.1 LCO 3.03.03 COND B LCO 3.03.03 COND B RA B.1 LCO 3.03.03 T 3.03.03-1 04
15.03.05 T 15.03.05-05 17	LCO 3.03.03 COND A LCO 3.03.03 COND A RA A.1 LCO 3.03.03 COND B LCO 3.03.03 COND B RA B.1 LCO 3.03.03 T 3.03.03-1 05
15.03.05 T 15.03.05-05 18	LCO 3.03.03 COND A LCO 3.03.03 COND A RA A.1 LCO 3.03.03 COND B LCO 3.03.03 COND B RA B.1 LCO 3.03.03 T 3.03.03-1 02
15.03.05 T 15.03.05-05 19	LCO 3.03.03 COND A LCO 3.03.03 COND A RA A.1 LCO 3.03.03 COND B LCO 3.03.03 COND B RA B.1 LCO 3.03.03 T 3.03.03-1 03
15.03.05 T 15.03.05-05 20	LCO 3.03.03 COND A LCO 3.03.03 COND A RA A.1 LCO 3.03.03 COND B LCO 3.03.03 COND B RA B.1 LCO 3.03.03 T 3.03.03-1 15
15.03.05 T 15.03.05-05 21	LCO 3.03.03 COND A LCO 3.03.03 COND A RA A.1 LCO 3.03.03 COND B LCO 3.03.03 COND B RA B.1

Description of Changes - NUREG-1431 Section 3.03.03

15-Mar-01

DOC Number	DOC Text	
	15.03.05 T 15.03.05-05 21	LCO 3.03.03 T 3.03.03-1 09
	15.03.05 T 15.03.05-05 22	LCO 3.03.03 COND A LCO 3.03.03 COND A RA A.1 LCO 3.03.03 COND B LCO 3.03.03 COND B RA B.1 LCO 3.03.03 T 3.03.03-1 10
	15.03.05 T 15.03.05-05 23	LCO 3.03.03 COND A LCO 3.03.03 COND A RA A.1 LCO 3.03.03 COND B LCO 3.03.03 COND B RA B.1 LCO 3.03.03 T 3.03.03-1 11
	15.03.05 T 15.03.05-05 24	LCO 3.03.03 COND A LCO 3.03.03 COND A RA A.1 LCO 3.03.03 COND B LCO 3.03.03 COND B RA B.1 LCO 3.03.03 T 3.03.03-1 19
	15.03.05 T 15.03.05-05 25	LCO 3.03.03 COND A LCO 3.03.03 COND A RA A.1 LCO 3.03.03 COND B LCO 3.03.03 COND B RA B.1 LCO 3.03.03 T 3.03.03-1 16
	15.03.05 T 15.03.05-05 26	LCO 3.03.03 COND A LCO 3.03.03 COND A RA A.1 LCO 3.03.03 COND B LCO 3.03.03 COND B RA B.1 LCO 3.03.03 T 3.03.03-1 17
	15.03.05 T 15.03.05-05 27	LCO 3.03.03 COND A LCO 3.03.03 COND A RA A.1 LCO 3.03.03 COND B LCO 3.03.03 COND B RA B.1 LCO 3.03.03 T 3.03.03-1 18

DOC Number	DOC Text

M.02
Rev. E

The operator actions of CTS Table 15.3.5-5, items # 4, 6, 9, 11, 13 and 15-27, require the unit be in hot shutdown within 12 hours, if operability of the PAM instrumentation is not restored within the specified completion time. Proposed ITS LCO 3.3.3, Condition F is entered if the Required Action and associated Completion Time of Condition C are not met for the above instrumentation. Required Action F.1 requires the unit be in MODE 3 in 6 hours and in MODE 4 in 12 hours. This change imposes additional requirements on unit operation and is more restrictive. This change is necessary in order to bring the unit to a MODE where the requirements of the LCO do not apply.

CTS:	ITS:
15.03.05 T 15.03.05-05 04	LCO 3.03.03 COND C LCO 3.03.03 COND F LCO 3.03.03 COND F RA F.1 LCO 3.03.03 COND F RA F.2
15.03.05 T 15.03.05-05 06	LCO 3.03.03 COND C LCO 3.03.03 COND F LCO 3.03.03 COND F RA F.1 LCO 3.03.03 COND F RA F.2
15.03.05 T 15.03.05-05 09	LCO 3.03.03 COND C LCO 3.03.03 COND F LCO 3.03.03 COND F RA F.1 LCO 3.03.03 COND F RA F.2
15.03.05 T 15.03.05-05 11	LCO 3.03.03 COND C LCO 3.03.03 COND F LCO 3.03.03 COND F RA F.1 LCO 3.03.03 COND F RA F.2
15.03.05 T 15.03.05-05 12	LCO 3.03.03 COND C LCO 3.03.03 COND F LCO 3.03.03 COND F RA F.1 LCO 3.03.03 COND F RA F.2
15.03.05 T 15.03.05-05 13	LCO 3.03.03 COND C LCO 3.03.03 COND F LCO 3.03.03 COND F RA F.1 LCO 3.03.03 COND F RA F.2
15.03.05 T 15.03.05-05 15	LCO 3.03.03 COND C LCO 3.03.03 COND F LCO 3.03.03 COND F RA F.1 LCO 3.03.03 COND F RA F.2
15.03.05 T 15.03.05-05 16	LCO 3.03.03 COND C LCO 3.03.03 COND F

Description of Changes - NUREG-1431 Section 3.03.03

15-Mar-01

DOC Number	DOC Text	
	15.03.05 T 15.03.05-05 16	LCO 3.03.03 COND F RA F.1
		LCO 3.03.03 COND F RA F.2
	15.03.05 T 15.03.05-05 17	LCO 3.03.03 COND C
		LCO 3.03.03 COND F
		LCO 3.03.03 COND F RA F.1
		LCO 3.03.03 COND F RA F.2
	15.03.05 T 15.03.05-05 18	LCO 3.03.03 COND C
		LCO 3.03.03 COND F
		LCO 3.03.03 COND F RA F.1
		LCO 3.03.03 COND F RA F.2
	15.03.05 T 15.03.05-05 19	LCO 3.03.03 COND C
		LCO 3.03.03 COND F
		LCO 3.03.03 COND F RA F.1
		LCO 3.03.03 COND F RA F.2
	15.03.05 T 15.03.05-05 20	LCO 3.03.03 COND C
		LCO 3.03.03 COND F
		LCO 3.03.03 COND F RA F.1
		LCO 3.03.03 COND F RA F.2
	15.03.05 T 15.03.05-05 21	LCO 3.03.03 COND C
		LCO 3.03.03 COND F
		LCO 3.03.03 COND F RA F.1
		LCO 3.03.03 COND F RA F.2
	15.03.05 T 15.03.05-05 22	LCO 3.03.03 COND C
		LCO 3.03.03 COND F
		LCO 3.03.03 COND F RA F.1
		LCO 3.03.03 COND F RA F.2
	15.03.05 T 15.03.05-05 23	LCO 3.03.03 COND C
		LCO 3.03.03 COND F
		LCO 3.03.03 COND F RA F.1
		LCO 3.03.03 COND F RA F.2
	15.03.05 T 15.03.05-05 24	LCO 3.03.03 COND C
		LCO 3.03.03 COND F
		LCO 3.03.03 COND F RA F.1
		LCO 3.03.03 COND F RA F.2
	15.03.05 T 15.03.05-05 25	LCO 3.03.03 COND C
		LCO 3.03.03 COND F
		LCO 3.03.03 COND F RA F.1
		LCO 3.03.03 COND F RA F.2

DOC Number	DOC Text	
	15.03.05 T 15.03.05-05 26	LCO 3.03.03 COND C LCO 3.03.03 COND F LCO 3.03.03 COND F RA F.1 LCO 3.03.03 COND F RA F.2
	15.03.05 T 15.03.05-05 27	LCO 3.03.03 COND C LCO 3.03.03 COND F LCO 3.03.03 COND F RA F.1 LCO 3.03.03 COND F RA F.2
	15.03.05 T 15.03.05-05 28	LCO 3.03.03 COND F RA F.2
M.03 Rev. A	The operator actions of CTS Table 15.3.5-5, item #10, Containment Hydrogen Concentration, require the unit be in hot shutdown within 6 hours, if the operability of at least one channel cannot be restored in 72 hours. Proposed ITS LCO 3.3.3, Condition D is entered if both hydrogen monitor channels are inoperable. Required Action D.1 requires restoration of at least one channel in 72 hours, consistent with the CTS action. However, if Condition D cannot be met, Condition F is entered, requiring the unit be in MODE 3 in 6 hours and in MODE 4 in 12 hours. This change imposes additional requirements on unit operation, but is necessary in order to bring the unit to a MODE where the requirements of the LCO no longer apply.	
	CTS:	**ITS:**
	15.03.05 T 15.03.05-05 10	LCO 3.03.03 COND F LCO 3.03.03 COND F RA F.1 LCO 3.03.03 COND F RA F.2 LCO 3.03.03 COND F RA F.2
M.04 Rev. A	The operator actions of CTS Table 15.3.5-5, item #28, Containment Isolation Position Indication, require an inoperable containment isolation valve shut position indication be restored in 7 days or close the valve or be in hot shutdown within the next 12 hours. Proposed ITS LCO 3.3.3, Condition C is entered if both channels associated with a penetration flowpath are inoperable. Required Action C.1 requires restoration of one channel in 7 days. If the Required Action and associated Completion Time of Condition C are not met, Condition E and Table 3.3.3-1 direct entry into Condition F. Required Action F.1 requires the unit be in MODE 3 in 6 hours and in MODE 4 in 12 hours. This change imposes additional requirements on unit operation and is more restrictive. This change is necessary in order to place the unit in a MODE where the requirements of the LCO no longer apply.	
	CTS:	**ITS:**
	15.03.05 T 15.03.05-05 28	LCO 3.03.03 COND F LCO 3.03.03 COND F RA F.1

Description of Changes - NUREG-1431 Section 3.03.03

15-Mar-01

DOC Number	DOC Text
M.05 Rev. A	CTS Table 15.4.1-1, items #20 and 38, AFW Flowrate and RWST Level, have been modified by the addition of a 31 day Channel Check surveillance requirement. The performance of a Channel Check once every 31 days ensures a gross instrumentation failure has not occurred. A Channel Check is key to verifying the instrumentation continues to operate properly between performances of the Channel Calibrations. The frequency of 31 days is based on operating experience that demonstrates that channel failure is rare. The Channel Check supplements less formal, but more frequent, checks of channels during normal operational use of the displays. This change imposes additional requirements on unit operation and is more restrictive.

CTS:	ITS:
15.04.01 T 15.04.01-01 20	SR 3.03.03.01
NEW	SR 3.03.03.01

M.06 Rev. A	CTS Table 15.4.1-1 has been modified by the adoption of Channel Check and Channel Calibration surveillance requirements for the following instrumentation: RCS Wide Range Pressure; RCS Narrow Range Pressure; RCS Wide Range Hot Leg Temperature; RCS Wide Range Cold Leg Temperature; and Steam Generator (Wide Range) Water Level. CTS Table 15.4.1-1 is also modified by the adoption of a Channel Check and TADOT for the Containment Isolation Position Indication. CTS Table 15.3.5-5 requires these indicators be operable to provide required information to the operators during accident situations, as described in Regulatory Guide 1.97. The operability of these indicators will be verified by the performance of the Channel Check, Channel Calibration and TADOT surveillance requirements, as applicable. The performance of the Channel Check once every 31 days ensures a gross instrumentation failure has not occurred. A Channel Check is key to verifying the instrumentation continues to operate properly between each Channel Calibration. The frequency of 31 days is adequate. The Channel Check supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the LCO required channels. A Channel Calibration is a complete check of the instrument loop. The test verifies that the channel responds to a measured parameter with the necessary range and accuracy. The 18 month frequency is based on operating experience and consistency with the typical industry refueling cycle. A TADOT of the Containment Isolation Valve Position Indication will verify the valve position indications against the actual position of the valves. This change imposes additional requirements on unit operation and is more restrictive, but is necessary to verify the operability of the required LCO instrumentation.

CTS:	ITS:
NEW	SR 3.03.03.01 SR 3.03.03.03 SR 3.03.03.04

A.1

TABLE 15.3.5-5
INSTRUMENT OPERATING CONDITIONS FOR POST ACCIDENT MONITORING INSTRUMENTATION

LA.1

NO.	FUNCTIONAL UNIT	1 TOTAL NO. OF CHANNELS	2 MINIMUM OPERABLE CHANNELS	OPERATOR ACTION IF CONDITIONS OF COLUMN 2 CANNOT BE MET
~~1.~~	~~PORV Position Indicator~~	~~1/Valve~~	~~1/Valve~~	~~If the operability of the PORV position indicator cannot be restored within 48 hours, shut the associated PORV Block Valve.~~
~~2.~~	~~PORV Block Valve Position Indicator~~	~~1/Valve~~	~~1/Valve~~	~~If the operability of the PORV Block Valve Position Indicator cannot be restored within 48 hours, shut and verify the Block Valve shut by direct observation or declare the Block Valve inoperable.~~
~~3.~~	~~Safety Valve Position Indicator~~	~~2/Valve~~	~~1/Valve~~	~~If the operability of at least one of the Safety Valve Position Indicators cannot be restored within seven days, be in at least hot shutdown within the next 12 hours.~~
4.	Reactor Coolant System Subcooling	2	1	If operability of at least one subcooling monitor cannot be restored within 48 hours, be in hot shutdown within the next twelve hours.
~~5.~~	~~AFW Pump Discharge Flowrate~~	~~3~~	~~#~~	~~If the minimum number of AFW Pump Discharge Flowrate channels required to provide indication of AFW flow to both steam generators cannot be restored to an operable status within 48 hours, be in hot shutdown within the next twelve hours.~~

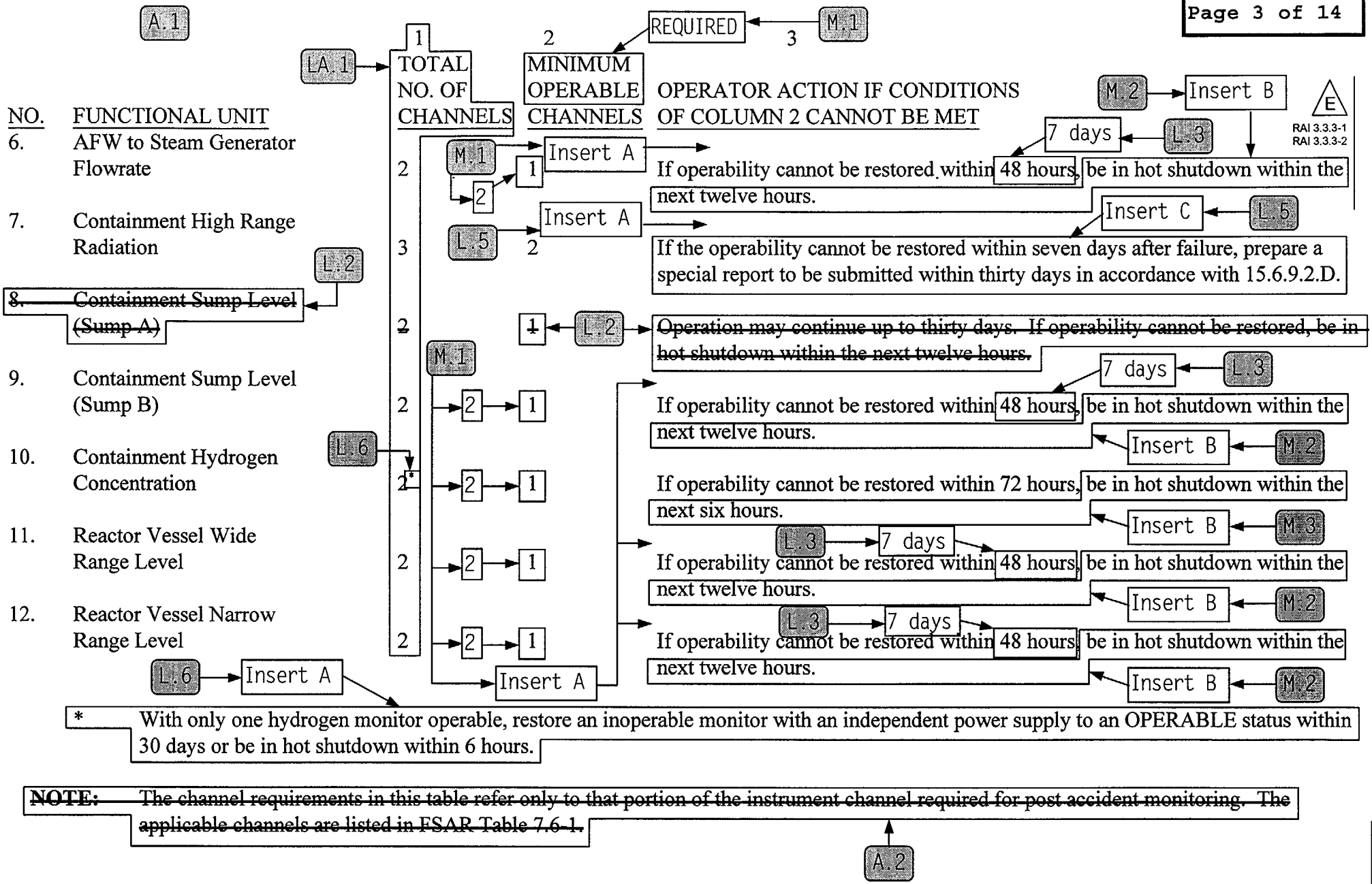
L.2 L.2 L.3 L.3 M.1 M.1 M.1 M.2 Insert A Insert B 7 days

~~# The minimum number of operable channels for AFW Pump Discharge Flowrate is the number of AFW Pump Discharge Flowrate channels, in conjunction with the number of operable AFW to Steam Generator Flowrate channels, required to provide indication of AFW flow to both steam generators.~~

~~**NOTE:** The channel requirements in this table refer only to that portion of the instrument channel required for post accident monitoring. The applicable channels are listed in FSAR Table 7.6-1.~~

A.2

TABLE 15.3.5-5 (continued)



A.1

TABLE 15.3.5-5 (continued)

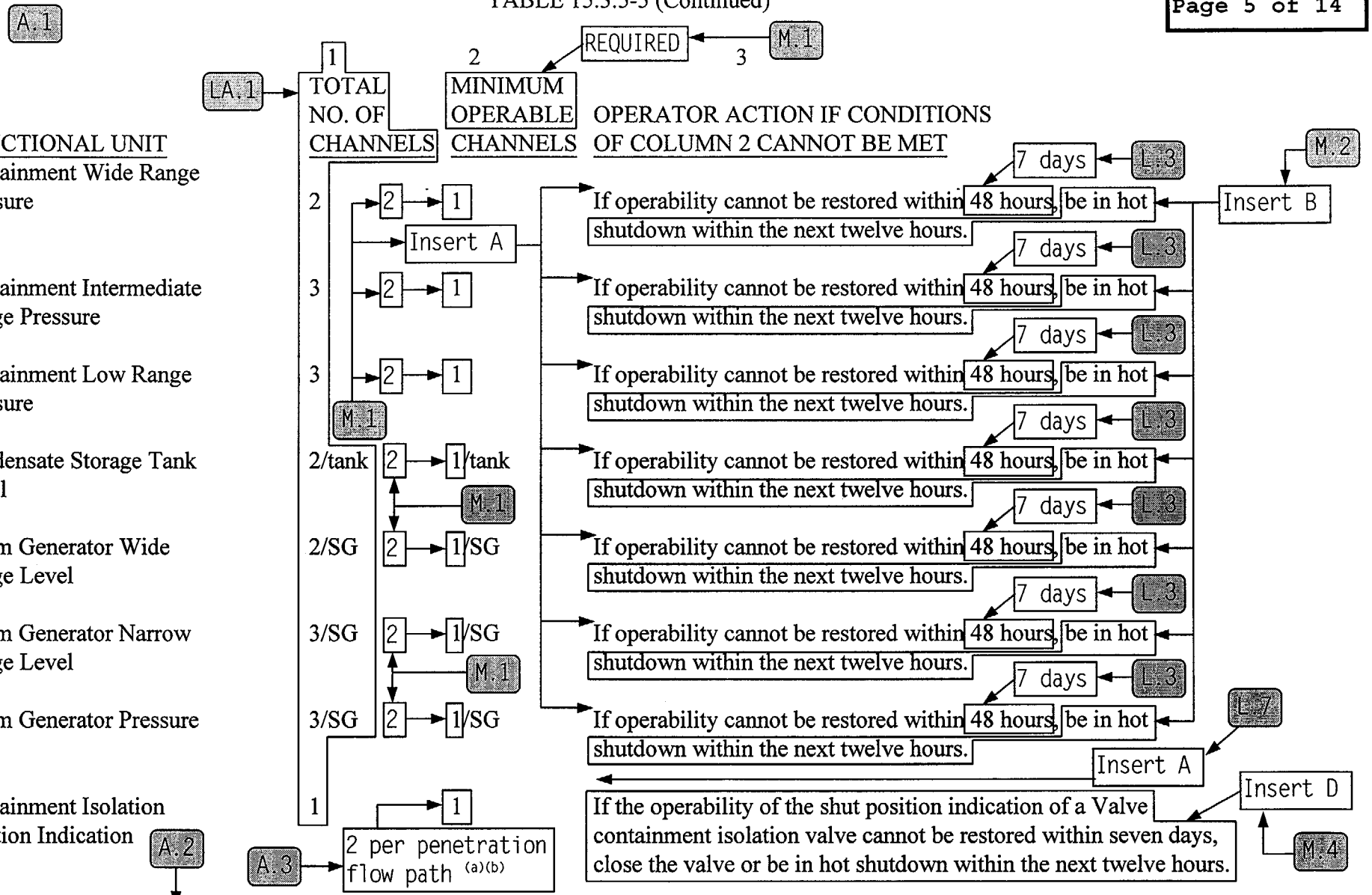
NO.	FUNCTIONAL UNIT	1 TOTAL NO. OF CHANNELS	2 MINIMUM OPERABLE CHANNELS	OPERATOR ACTION IF CONDITIONS OF COLUMN 2 CANNOT BE MET
13.	In-Core Thermocouples	39 installed per core	2/core quadrant	If operability cannot be restored within 48 hours, be in hot shutdown within the next twelve hours.
~~14.~~	~~Main Steam Line Radiation~~	~~1/steam line~~	~~1/steam line~~	~~If operability cannot be restored within seven days, prepare a special report to be submitted within thirty days in accordance with 15.6.9.2.E.~~
15.	Refueling Water Storage Tank Level	2	2	1
16.	RCS Wide Range Pressure	3	2	1
17.	RCS Narrow Range Pressure	4	2	1
18.	RCS Wide Range Hot Leg Temperature	2/loop	2	1/loop
19.	RCS Wide Range Cold Leg Temperature	2/loop	2	1/loop
20.	Pressurizer Level	4	2	1

LA.1 M.1 L.2 L.3 M.2 Insert A Insert B 7 days REQUIRED

NOTE: ~~The channel requirements in this table refer only to that portion of the instrument channel required for post accident monitoring. The applicable channels are listed in FSAR Table 7.6-1.~~

A.2

TABLE 15.3.5-5 (Continued)



~~**NOTE:** The channel requirements in this table refer only to that portion of the instrument channel required for post accident monitoring. The applicable channels are listed in FSAR Table 7.6-1.~~

A.3

(a) Not required for isolation valves whose associated penetration is isolated by at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.
(b) Only one position indication channel is required for penetration flowpaths with only one installed control room indication channel.

E
Errata #40

INSERT A

With one required channel inoperable, restore channel to operable status in 30 days, OR immediately initiate action in accordance with Specification 5.6.6.

E
Errata #11

INSERT B

be in MODE 3 in the next 6 hours and in MODE 4 in 12 hours.

INSERT C

With two required channels inoperable, restore one channel to operable status in 7 days, OR immediately initiate action in accordance with Specification 5.6.6.

E
Errata #11

INSERT D

With two required channels inoperable, restore one channel to operable status in 7 days, OR be in MODE 3 in 6 hours and MODE 4 in 12 hours.

Justification For Deviations - NUREG-1431 Section 3.03.03

15-Mar-01

JFD Number	JFD Text
01 Rev. A	The Note modifying NUREG-1431 SR 3.3.3.2 has not been retained in ITS. The Note states, "Neutron detectors are excluded from CHANNEL CALIBRATION." Point Beach did not identify any Type A or Category I variables that utilize neutron detectors in the Regulatory Guide 1.97 analysis. Therefore this note is unnecessary and has been deleted.

ITS:	NUREG:
B 3.03.03	B 3.03.03
N/A	SR 3.03.03.02 NOTE
SR 3.03.03.03	SR 3.03.03.02

JFD Number	JFD Text
02 Rev. A	The brackets have been removed and the proper plant specific information has been provided. In some instances, even though the information was designated as being site specific information in the LCO (bracketed), the corresponding Bases information was not bracketed. These cases are self evident, corresponding to the bracketed information in the LCO, and have had the appropriate site specific information provided.

ITS:	NUREG:
B 3.03.03	B 3.03.03
LCO 3.03.03 T 3.03.03-1 20	LCO 3.03.03 T 3.03.03-1 15
LCO 3.03.03 T 3.03.03-1 21	LCO 3.03.03 T 3.03.03-1 16
LCO 3.03.03 T 3.03.03-1 22	LCO 3.03.03 T 3.03.03-1 17
LCO 3.03.03 T 3.03.03-1 23	LCO 3.03.03 T 3.03.03-1 18
SR 3.03.03.03	SR 3.03.03.02

JFD Number	JFD Text
03 Rev. E	ITS SR 3.3.3.2 has been modified by a Note modifying the CHANNEL CALIBRATION surveillance requirement for the Containment Area Radiation (high Range) detectors. The Note specifies the SR for these detectors shall consist of a response to a source. Point Beach CTS 15.4.1, Table 15.4.1-1, item #25, Containment High Range Radiation, Calibration surveillance requirement is modified by Note (14). This Note states, "Calibration is to be a verification of response to a source." This relaxation of the CHANNEL CALIBRATION surveillance requirement is necessary because of the difficulty associated with simulating a signal, and is consistent with the current licensing basis.

ITS:	NUREG:
B 3.03.03	B 3.03.03
SR 3.03.03.03	SR 3.03.03.02
SR 3.03.03.03 NOTE	N/A
	N/A

Justification For Deviations - NUREG-1431 Section 3.03.03

15-Mar-01

JFD Number	JFD Text
04 Rev. A	NUREG-1431, LCO 3.3.3, Table 3.3.3-1, items #1 and 2, Power Range Neutron Flux and Source Range Neutron Flux, are not retained in ITS. In the Point Beach response to Generic Letter 82-33, these instruments where included in the "Exceptions to Regulatory Guide 1.97" section. Although Regulatory Guide 1.97 recommends Category I instrumentation to monitor neutron flux, Point Beach source and intermediate range neutron flux monitors do not meet Category I requirements for environmental and seismic qualification. In NRC SER (7/11/86). "Conformance to Regulatory Guide 1.97 for Point Beach Nuclear Plant Units 1 and 2," the NRC concluded that the following PBNP instrumentation adequately verifies overall shutdown reactivity control during post accident conditions: - A new, environmentally and seismically qualified wide-range neutron flux monitoring channel installed in each unit. - 2 existing channels of source range and 2 existing channels of Intermediate range neutron flux monitoring instrumentation. - Control rod position indication signals. - SI system monitoring instrumentation. - Monitoring of the RCS soluble boron concentration by analysis of samples. On this basis, the existing source range and intermediate range detector channels were classified as Category III equipment and the new wide-range flux monitor channels were classified as Category II equipment. Therefore, none of these instruments are required to be in ITS LCO 3.3.3.

ITS:	NUREG:
B 3.03.03	B 3.03.03
N/A	LCO 3.03.03 T 3.03.03-1 01 LCO 3.03.03 T 3.03.03-1 02

05 Rev. A	ITS LCO 3.3.3, Table 3.3.3-1, item #6, Reactor Vessel Water Level, has been modified by the addition of "(Wide Range)" to the function description. This change is necessary to discern this function from item #7, Reactor Vessel Water Level (Narrow Range).

ITS:	NUREG:
LCO 3.03.03 T 3.03.03-1 06	LCO 3.03.03 T 3.03.03-1 06

06 Rev. A	ITS LCO 3.3.3, Table 3.3.3-1, item #8, Containment Sump Water Level (Wide Range), has been modified by specifying this requirement pertains to Sump B only. Containment Sump A Water Level (Narrow Range) is not a Category I variable.

ITS:	NUREG:
B 3.03.03	B 3.03.03
LCO 3.03.03 T 3.03.03-1 08	LCO 3.03.03 T 3.03.03-1 07

Justification For Deviations - NUREG-1431 Section 3.03.03

15-Mar-01

JFD Number	JFD Text
07 Rev. A	ITS LCO 3.3.3, Table 3.3.3-1, item #6, Reactor Vessel Water Level (Wide Range), column 3, Conditions referenced from Required Action E.1, has been revised from "G" to "F". Condition G requires the immediate initiation of action in accordance with ITS Section 5, PAM Reports. Condition F requires the unit be in MODE 3 in 6 hours and in MODE 4 in 12 hours. This change is consistent with the CTS, which requires the unit to be shutdown, if both channels are inoperable and cannot be restored within the specified completion time. The Bases of LCO 3.3.3, Condition G, has also been modified to reflect that there has not been an alternate means developed and tested for monitoring Reactor Vessel Water Level (Wide Range).

ITS:	NUREG:
B 3.03.03	B 3.03.03
LCO 3.03.03 T 3.03.03-1 06	LCO 3.03.03 T 3.03.03-1 06

JFD Number	JFD Text
08 Rev. A	NUREG-1431, LCO 3.3.3, Table 3.3.3-1, Note (c) has not been retained in ITS. Note (c) modifies the Required Channels column of the Core Exit Temperature - Quadrants 1-4. This Note states, "A channel consists of two core exit thermocouples (CETs)." Point Beach current licensing basis requires 2 CETs per quadrant to be operable, for a total of 8 CETs.

ITS:	NUREG:
B 3.03.03	B 3.03.03
LCO 3.03.03 T 3.03.03-1 20	LCO 3.03.03 T 3.03.03-1 15
LCO 3.03.03 T 3.03.03-1 21	LCO 3.03.03 T 3.03.03-1 16
LCO 3.03.03 T 3.03.03-1 22	LCO 3.03.03 T 3.03.03-1 17
LCO 3.03.03 T 3.03.03-1 23	LCO 3.03.03 T 3.03.03-1 18
N/A	LCO 3.03.03 T 3.03.03-1 FOOT NOTE C

JFD Number	JFD Text
09 Rev. E	Not used.

ITS:	NUREG:
N/A	N/A

Justification For Deviations - NUREG-1431 Section 3.03.03

15-Mar-01

JFD Number	JFD Text
10 Rev. A	ITS LCO 3.3.3, Table 3.3.3-1 is revised by the addition of the following Post Accident Monitoring instrumentation: RCS Subcooling; RCS Pressure (Narrow Range); Reactor Vessel Water Level (Narrow Range); Containment Pressure (Intermediate Range); Containment Pressure (Low Range); SG Water Level (Narrow Range); SG Pressure; RWST Level. These additions are necessary to reflect the Point Beach Type A and Category I variables identified in the Regulatory Guide 1.97 analyses, previously approved by the NRC staff. This change also results in the renumbering of subsequent functions in Table 3.3.3-1 and in the associated Bases.

ITS:	NUREG:
B 3.03.03	B 3.03.03
LCO 3.03.03 T 3.03.03-1 01	N/A
LCO 3.03.03 T 3.03.03-1 02	LCO 3.03.03 T 3.03.03-1 03
LCO 3.03.03 T 3.03.03-1 03	LCO 3.03.03 T 3.03.03-1 04
LCO 3.03.03 T 3.03.03-1 04	LCO 3.03.03 T 3.03.03-1 05
LCO 3.03.03 T 3.03.03-1 05	N/A
LCO 3.03.03 T 3.03.03-1 07	N/A
LCO 3.03.03 T 3.03.03-1 08	LCO 3.03.03 T 3.03.03-1 07
LCO 3.03.03 T 3.03.03-1 09	LCO 3.03.03 T 3.03.03-1 08
LCO 3.03.03 T 3.03.03-1 10	N/A
LCO 3.03.03 T 3.03.03-1 11	N/A
LCO 3.03.03 T 3.03.03-1 12	LCO 3.03.03 T 3.03.03-1 09
LCO 3.03.03 T 3.03.03-1 13	LCO 3.03.03 T 3.03.03-1 10
LCO 3.03.03 T 3.03.03-1 14	LCO 3.03.03 T 3.03.03-1 11
LCO 3.03.03 T 3.03.03-1 15	LCO 3.03.03 T 3.03.03-1 12
LCO 3.03.03 T 3.03.03-1 16	LCO 3.03.03 T 3.03.03-1 13
LCO 3.03.03 T 3.03.03-1 17	N/A
LCO 3.03.03 T 3.03.03-1 18	N/A
LCO 3.03.03 T 3.03.03-1 19	LCO 3.03.03 T 3.03.03-1 14
LCO 3.03.03 T 3.03.03-1 20	LCO 3.03.03 T 3.03.03-1 16
LCO 3.03.03 T 3.03.03-1 21	LCO 3.03.03 T 3.03.03-1 17
LCO 3.03.03 T 3.03.03-1 22	LCO 3.03.03 T 3.03.03-1 18
LCO 3.03.03 T 3.03.03-1 23	LCO 3.03.03 T 3.03.03-1 19
LCO 3.03.03 T 3.03.03-1 24	LCO 3.03.03 T 3.03.03-1 19

Justification For Deviations - NUREG-1431 Section 3.03.03

15-Mar-01

JFD Number	JFD Text	
	LCO 3.03.03 T 3.03.03-1 25	N/A
11 Rev. A	LCO 3.3.3 Bases discussion of RCS Hot and Cold Leg Temperatures has been revised to reflect the Point Beach specific range of indication for these instruments.	
	ITS:	**NUREG:**
	B 3.03.03	B 3.03.03
12 Rev. A	LCO 3.3.3 Bases discussion of RCS Pressure has been revised by the addition of "(Narrow Range)". This Bases discussion applies to Table 3.3.3-1, items #4 and 5, RCS Pressure (Wide Range) and RCS Pressure (Narrow Range).	
	ITS:	**NUREG:**
	B 3.03.03	B 3.03.03
13 Rev. A	LCO 3.3.3 Bases discussion of the CST is modified to reflect Point Beach design basis. Service Water provides the safety related source of water to AFW.	
	ITS:	**NUREG:**
	B 3.03.03	B 3.03.03
14 Rev. A	LCO 3.3.3 Bases discussion of Containment Isolation Valve Position has been revised. "Phase A and Phase B" isolation has been replaced with "Containment" isolation, to reflect the nomenclature currently used at Point Beach.	
	ITS:	**NUREG:**
	B 3.03.03	B 3.03.03
15 Rev. A	LCO 3.3.3 Bases discussion of SG Water Level indication has been revised to reflect the Point Beach design and nomenclature for the Wide Range instrumentation.	
	ITS:	**NUREG:**
	B 3.03.03	B 3.03.03
16 Rev. A	LCO 3.3.3 Bases discussion of the CST Level indication has been revised to reflect the Point Beach specific range of indication for these instruments.	
	ITS:	**NUREG:**
	B 3.03.03	B 3.03.03

Justification For Deviations - NUREG-1431 Section 3.03.03

15-Mar-01

JFD Number	JFD Text	
17 Rev. A	LCO 3.3.3 Bases discussion of CST Level has been revised. The Bases states that when CST is depleted, manual operator action is required to replenish the CST or align the suction of the AFW pumps from the hotwell. This has been changed to reflect Point Beach operation of re-aligning the AFW pump suction from Service Water.	
	ITS:	**NUREG:**
	B 3.03.03	B 3.03.03
18 Rev. A	LCO 3.3.3 Bases discussion of AFW Flow indication has been revised to reflect the Point Beach specific range of indication for this instrument.	
	ITS:	**NUREG:**
	B 3.03.03	B 3.03.03
19 Rev. A	LCO 3.3.3 Bases discussion of the CST Level is modified to reflect Point Beach licensing basis. AFW is also required to mitigate a Loss of Normal Feedwater accident.	
	ITS:	**NUREG:**
	B 3.03.03	B 3.03.03
20 Rev. A	SR 3.3.3.2 has been adopted for inclusion into the ITS. CTS Table 15.4.1-1, item 26, requires the performance of a calibration of the gas portion of the Hydrogen monitors once per quarter. This change is necessary to ensure the operability of the hydrogen monitors. Adoption of this surveillance requirement also results in the re-numbering of subsequent surveillance requirements.	
	ITS:	**NUREG:**
	B 3.03.03	B 3.03.03
	SR 3.03.03.02	N/A
	SR 3.03.03.03	SR 3.03.03.02
21 Rev. A	ITS LCO 3.3.3, Table 3.3.3-1, items 2 and 3 function descriptions are modified by the addition of "(Wide Range)". This addition is necessary to reflect the nomenclature currently used at Point Beach .	
	ITS:	**NUREG:**
	B 3.03.03	B 3.03.03
	LCO 3.03.03 T 3.03.03-1 02	LCO 3.03.03 T 3.03.03-1 03
	LCO 3.03.03 T 3.03.03-1 03	LCO 3.03.03 T 3.03.03-1 04

Justification For Deviations - NUREG-1431 Section 3.03.03

15-Mar-01

JFD Number	JFD Text	
22 Rev. A	The number of required channels for ITS LCO 3.3.3, Table 3.3.3-1, item 19, CST Level, has been revised to reflect the Point Beach design and licensing basis, which utilizes 2 indicators per CST.	
	ITS:	**NUREG:**
	B 3.03.03	B 3.03.03
	LCO 3.03.03 T 3.03.03-1 19	LCO 3.03.03 T 3.03.03-1 14
23 Rev. A	LCO 3.3.3 Bases description of the LCO references has been modified. Reg Guide 1.97 contains the recommendations of parameters to provide adequate information to monitor and assess unit status during an accident. The NRC SER acknowledges conformance to RG 1.97.	
	ITS:	**NUREG:**
	B 3.03.03	B 3.03.03
24 Rev. A	LCO 3.3.3 Bases description of the LCO has been modified. Point Beach current licensing basis does not require more than two channels of any PAM instrument.	
	ITS:	**NUREG:**
	B 3.03.03	B 3.03.03
25 Rev. A	The LCO 3.3.3 Bases descriptions of PAM functions 2, 3, 4, 9, 10, 11, 20, 21, 22, 23 and 24 have been modified to reflect the purpose of these instruments as identified in the WE Letter to the NRC, dated September 1, 1983 and confirmed in NRC SER Letter, "Conformance to Regulatory Guide 1.97 for Point Beach Plant Units 1 and 2," July 11, 1986.	
	ITS:	**NUREG:**
	B 3.03.03	B 3.03.03
26 Rev. A	ITS LCO 3.3.3 Bases discussion of Containment Pressure has been modified by the addition of "(Wide, Intermediate and Low Range)" to the function description, because the discussion encompasses all of these instruments.	
	ITS:	**NUREG:**
	B 3.03.03	B 3.03.03

Justification For Deviations - NUREG-1431 Section 3.03.03

15-Mar-01

JFD Number	JFD Text
27 Rev. A	SR 3.3.3.4 has been adopted for inclusion into the ITS. This surveillance will apply only to the Containment Isolation Valve Position Indication. SR 3.3.3.4 requires the performance of a TADOT every 18 months. This surveillance will replace the NUREG 1431 requirement to perform a CHANNEL CALIBRATION on the Containment Isolation Valve Position Indication. A TADOT is the appropriate test to perform on this Function, as the Containment Isolation Valve Position Indications do not have a required range or accuracy. The TADOT will consist of verifying the valve position indication against the actual position of the valves.

ITS:	NUREG:
B 3.03.03	B 3.03.03
SR 3.03.03.04	N/A

JFD Number	JFD Text
28 Rev. A	NUREG 1431 Bases discussion of Required Action G.1 has been modified to reflect Point Beach configuration. Some alternative means of monitoring Containment Area Radiation are permanently installed and do not require "temporary" installation. Therefore the discussion has been revised by replacing "temporarily installed" with "used".

ITS:	NUREG:
B 3.03.03	B 3.03.03

JFD Number	JFD Text
29 Rev. E	NUREG-1431, Required Actions B.1 and G.1 have been revised to reflect changes in Section 5.6. The PAM Report requirements will reside in ITS Specification 5.6.6, not 5.6.8.

ITS:	NUREG:
B 3.03.03	B 3.03.03
LCO 3.03.03 COND B RA B.1	LCO 3.03.03 COND B RA B.1
LCO 3.03.03 COND G RA G.1	LCO 3.03.03 COND G RA G.1

Justification For Deviations - NUREG-1431 Section 3.03.03

15-Mar-01

JFD Number	JFD Text
30 Rev. E	ITS LCO 3.3.3, Table 3.3.3-1, Function 14, has been modified by the addition of Note c, whereby the 2 required hydrogen monitors are required to be powered from independent power supplies. This change is necessary to retain the implied requirement in CTS 15.3.5, Table 15.3.5-5, Function 10, Note *. Note * states, "With only one hydrogen monitor operable, restore an inoperable monitor with an independent power supply to an operable status within 30 days or be in hot shutdown within 6 hours." The CTS contains this note to clarify the requirements, because there are a total of 4 hydrogen monitors, 2 powered from the white instrument bus and 2 powered from the yellow instrument bus. In order to meet the redundancy requirements, the 2 required hydrogen monitors are required to be powered from independent power supplies (i.e., 1 from the white instrument bus and 1 from the yellow instrument bus). Therefore, the intent of the CTS requirements and RG 1.97 is maintained by the inclusion of Note c in the ITS.

ITS:	NUREG:
B 3.03.03	B 3.03.03
LCO 3.03.03 T 3.03.03-1 14 NOTE (C)	N/A
LCO 3.03.03 T 3.03.03-1 FOOTNOTE C	N/A

3.3 INSTRUMENTATION

3.3.3 Post Accident Monitoring (PAM) Instrumentation

LCO 3.3.3 The PAM instrumentation for each Function in Table 3.3.3-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

----------NOTES----------
1. LCO 3.0.4 is not applicable.

2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one required channel inoperable.	A.1 Restore required channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.6.8. 29 → 5.6.6	Immediately
C. ---------NOTE--------- Not applicable to hydrogen monitor channels. ---------- One or more Functions with two required channels inoperable.	C.1 Restore one channel to OPERABLE status.	7 days

E Errata #11

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two hydrogen monitor channels inoperable.	D.1 Restore one hydrogen monitor channel to OPERABLE status.	72 hours
E. Required Action and associated Completion Time of Condition C or D not met.	E.1 Enter the Condition referenced in Table 3.3.3-1 for the channel.	Immediately
F. As required by Required Action E.1 and referenced in Table 3.3.3-1.	F.1 Be in MODE 3. AND F.2 Be in MODE 4.	6 hours 12 hours
G. As required by Required Action E.1 and referenced in Table 3.3.3-1.	G.1 Initiate action in accordance with Specification 5.6.8.	Immediately

29 → 5.6.6

E Errata #11

SURVEILLANCE REQUIREMENTS

3 20

NOTE

SR 3.3.3.1 and SR 3.3.3.2 apply to each PAM instrumentation Function in Table 3.3.3-1, except Functions 12 and 14.

SR 3.3.3.1, SR 3.3.3.2 and SR 3.3.3.3 apply to Function 14 in Table 3.3.3-1. (20) (E) Errata #11

SR 3.3.3.1 and SR 3.3.3.4 apply to Function 12 in Table 3.3.3-1. (27)

SURVEILLANCE		FREQUENCY
SR 3.3.3.1	Perform CHANNEL CHECK for each required instrumentation channel that is normally energized.	31 days
SR 3.3.3.2 (3 20)	NOTE ~~Neutron detectors are excluded from CHANNEL CALIBRATION.~~ (1) Perform CHANNEL CALIBRATION.	[18] (18 2) months

NOTE
CHANNEL CALIBRATION of Containment Area Radiation (High Range) detectors shall consist of a response to a source. (3) (E) RAI 3.3.3-7

SR 3.3.3.2	Calibrate gas portion of Hydrogen Monitor.	92 days
SR 3.3.3.4 (20 27)	Perform TADOT.	18 months

Table 3.3.3-1 (page 1 of 1)
Post Accident Monitoring Instrumentation

	FUNCTION	REQUIRED CHANNELS	CONDITION REFERENCED FROM REQUIRED ACTION E.1
	~~1. Power Range Neutron Flux~~	~~2~~	~~F~~
	~~2. Source Range Neutron Flux~~	~~2~~	~~F~~
3	Reactor Coolant System (RCS) Hot Leg Temperature	2 per loop	F
4	RCS Cold Leg Temperature	2 per loop	F
5	RCS Pressure (Wide Range)	2	F
	6. Reactor Vessel Water Level	2	F
7	Containment Sump Water Level ~~(Wide Range)~~	2	F
8	Containment Pressure (Wide Range)	2	F
9	Containment Isolation Valve Position	2 per penetration flow path(a)(b)	F
10	Containment Area Radiation (High Range)	2	G
11	Hydrogen Monitors	2 (c)	F
12	Pressurizer Level	2	F
13	Steam Generator Water Level (Wide Range)	2 per steam generator	F
14	Condensate Storage Tank Level	2 per tank	F
15	Core Exit Temperature – Quadrant [1]	2 ~~(c)~~	F
16	Core Exit Temperature – Quadrant [2]	2 ~~(c)~~	F
17	Core Exit Temperature – Quadrant [3]	2 ~~(c)~~	F
18	Core Exit Temperature – Quadrant [4]	2 ~~(c)~~	F
19	Auxiliary Feedwater Flow	2	F

Insert 1
Insert 5
Insert 7
Inserts10&11
Inserts17&18
Insert 25
RCS
(Wide Range)
B
per tank
Errata #127
RAI 3.3.3-1
RAI 3.3.3-2

(a) Not required for isolation valves whose associated penetration is isolated by at least one closed and deactivated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.

(b) Only one position indication channel is required for penetration flow paths with only one installed control room indication channel.

~~(c) A channel consists of two core exit thermocouples (CETs).~~

~~Reviewer's Note: Table 3.3.3-1 shall be amended for each unit as necessary to list:~~

~~(1) All Regulatory Guide 1.97, Type A instruments, and~~

~~(2) All Regulatory Guide 1.97, Category I, non-Type A instruments in accordance with the unit's Regulatory Guide 1.97, Safety Evaluation Report.~~

(c) Each monitor shall be powered from an independent power supply.

Errata #127

BASES

LCO (continued)

There are a total of four hydrogen monitors, two powered from the white instrument bus and two powered from the yellow instrument bus. The LCO requires two hydrogen monitors to be OPERABLE, powered from independent power supplies. Therefore, one hydrogen monitor powered from the white instrument bus and one hydrogen monitor powered from the yellow instrument bus are required to be OPERABLE.

11 10 14

Hydrogen Monitors

Hydrogen Monitors are provided to detect high hydrogen concentration conditions that represent a potential for containment breach from a hydrogen explosion. This variable is also important in verifying the adequacy of mitigating actions.

E Errata #127

12 10 15

Pressurizer Level

Pressurizer Level is used to determine whether to terminate SI, if still in progress, or to reinitiate SI if it has been stopped. Knowledge of pressurizer water level is also used to verify the unit conditions necessary to establish natural circulation in the RCS and to verify that the unit is maintained in a safe shutdown condition.

30 13 10 16

Steam Generator Water Level (Wide Range)

SG Water Level is provided to monitor operation of decay heat removal via the SGs. The Category I indication of SG level is the extended startup range level instrumentation. The extended startup range level covers a span of ≥ 6 inches to ≤ 394 inches above the lower tubesheet. The measured differential pressure is displayed in inches of water at 68 °F.

15 wide

0 inches to 520 inches

15

~~Temperature compensation of this indication is performed manually by the operator.~~ Redundant monitoring capability is provided by two trains of instrumentation. The ~~uncompensated~~ level signal is input to the unit computer, a control room indicator, and the Emergency Feedwater Control System.

15

an indicator in the AFW Pump Room

25

~~SG Water Level (Wide Range) is used to:~~

- ~~identify the faulted SG following a tube rupture;~~
- ~~verify that the intact SGs are an adequate heat sink for the reactor;~~
- ~~determine the nature of the accident in progress (e.g., verify an SGTR); and~~

BASES

ACTIONS (continued)

29 → 5.6.6 → 5.6.8 which requires a written report to be submitted to the NRC immediately. This report discusses the results of the root cause evaluation of the inoperability and identifies proposed restorative actions. This action is appropriate in lieu of a shutdown requirement since alternative actions are identified before loss of functional capability, and given the likelihood of unit conditions that would require information provided by this instrumentation. | E Errata #11

C.1

Condition C applies when one or more Functions have two inoperable required channels (i.e., two channels inoperable in the same Function). Required Action C.1 requires restoring one channel in the Function(s) to OPERABLE status within 7 days. The Completion Time of 7 days is based on the relatively low probability of an event requiring PAM instrument operation and the availability of alternate means to obtain the required information. Continuous operation with two required channels inoperable in a Function is not acceptable because the alternate indications may not fully meet all performance qualification requirements applied to the PAM instrumentation. Therefore, requiring restoration of one inoperable channel of the Function limits the risk that the PAM Function will be in a degraded condition should an accident occur. Condition C is modified by a Note that excludes hydrogen monitor channels.

D.1

Condition D applies when two hydrogen monitor channels are inoperable. Required Action D.1 requires restoring one hydrogen monitor channel to OPERABLE status within 72 hours. The 72 hour Completion Time is reasonable based on the backup capability of the Post Accident Sampling System to monitor the hydrogen concentration for evaluation of core damage and to provide information for operator decisions. Also, it is unlikely that a LOCA (which would cause core damage) would occur during this time.

E.1

Condition E applies when the Required Action and associated Completion Time of Condition C or D are not met. Required Action E.1 requires entering the appropriate Condition

BASES

ACTIONS (continued)

referenced in Table 3.3.3-1 for the channel immediately. The applicable Condition referenced in the Table is Function dependent. Each time an inoperable channel has not met any Required Action of Condition C or D, and the associated Completion Time has expired, Condition E is entered for that channel and provides for transfer to the appropriate subsequent Condition.

F.1 and F.2

If the Required Action and associated Completion Time of Conditions C or D are not met and Table 3.3.3-1 directs entry into Condition F, the unit must be brought to a MODE where the requirements of this LCO do not apply. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and MODE 4 within 12 hours.

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

G.1

2 → ~~At this unit,~~ alternate means of monitoring ~~Reactor Vessel~~ ← 7

7 → ~~Water Level and~~ Containment Area Radiation have been developed and tested. These alternate means may be

28 → used → temporarily installed if the normal PAM channel cannot be restored to OPERABLE status within the allotted time. If these alternate means are used, the Required Action is not to shut down the unit but rather to follow the directions of

29 → 5.6.6 → Specification 6.6.8, in the Administrative Controls section of the TS. The report provided to the NRC should discuss the alternate means used, describe the degree to which the alternate means are equivalent to the installed PAM channels, justify the areas in which they are not equivalent, and provide a schedule for restoring the normal PAM channels.

E Errata #11

20 → SR 3.3.3.1, SR 3.3.3.2 and SR 3.3.3.3 apply to Function 14 in Table 3.3.3-1.

27 → SR 3.3.3.1 and SR 3.3.3.4 apply to Function 12 in Table 3.3.3-1.

E Errata #117

BASES

SURVEILLANCE REQUIREMENTS

A Note has been added to the SR Table to clarify that SR 3.3.3.1 and SR 3.3.3.3 apply to each PAM instrumentation Function in Table 3.3.3-1.

, except Functions 12 and 14 (20, 27)

SR 3.3.3.1

Performance of the CHANNEL CHECK once every 31 days ensures that a gross instrumentation failure has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the two instrument channels could be an indication of excessive instrument drift in one of the channels or of something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION. The high radiation instrumentation should be compared to similar unit instruments located throughout the unit.

Agreement criteria are determined by the unit staff, based on a combination of the channel instrument uncertainties, including isolation, indication, and readability. If a channel is outside the criteria, it may be an indication that the sensor or the signal processing equipment has drifted outside its limit. If the channels are within the criteria, it is an indication that the channels are OPERABLE.

As specified in the SR, a CHANNEL CHECK is only required for those channels that are normally energized.

The Frequency of 31 days is based on operating experience that demonstrates that channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the LCO required channels.

SR 3.3.3.2

SR 3.3.3.2 requires a calibration of the gas portion of the Hydrogen Monitors every 92 days. The calibration shall consist of a verification of the monitors response to a known concentration of hydrogen gas. The Frequency of 92 days is reasonable based on operating experience to ensure the OPERABILITY of the monitors.

20

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.3.[2]

3 20

3

This SR is modified by a Note that specifies the CHANNEL CALIBRATION of the Containment Area Radiation (High Range) detectors shall consist of a verification of a response to a source.

18 2

A CHANNEL CALIBRATION is performed every [18] months, or approximately at every refueling. CHANNEL CALIBRATION is a complete check of the instrument loop, including the sensor. The test verifies that the channel responds to measured parameter with the necessary range and accuracy. ~~This SR is modified by a Note that excludes neutron detectors. The calibration method for neutron detectors is specified in the Bases of LCO 3.3.1, "Reactor Trip System (RTS) Instrumentation."~~ The Frequency is based on operating experience and consistency with the typical industry refueling cycle.

1

E
RAI 3.3.3-7

REFERENCES

1. [Unit specific document (e.g., FSAR, NRC Regulatory Guide 1.97 SER letter).]
2. Regulatory Guide 1.97, [date]. Revision 2, December 1980
3. NUREG-0737, Supplement 1, "TMI Action Items."

2

2 NRC SER Letter, "Conformance to Regulatory Guide 1.97 for the Point Beach Nuclear Plant Units 1 and 2," July 11, 1986.

Whenever a sensing element is replaced, the next required CHANNEL CALIBRATION of the Core Exit thermocouple sensors is accomplished by an inplace cross calibration that compares the other sensing elements with the recently installed sensing element.

Approved TSTF 19

SR 3.3.3.4

SR 3.3.3.4 is the performance of a TADOT of Containment Isolation Valve Position Indication. This TADOT is performed every 18 months. The test shall independently verify the OPERABILITY of Containment Isolation valve position indication against the actual position of the valves.

27

The Frequency is reasonable based on the known reliability of the Functions and has been shown to be acceptable through operating experience.

No Significant Hazards Considerations - NUREG-1431 Section 3.03.03

15-Mar-01

NSHC Number	NSHC Text
A Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The proposed change involves reformatting and rewording of the current Technical Specifications. The reformatting and rewording process involves no technical changes to existing requirements. As such, this change is administrative in nature and does not impact initiators of analyzed events or assumed mitigation of accident or transient events. Therefore, this change does not increase the probability or consequences of an accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not require a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. The proposed change will not impose any new or eliminate any old requirements. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? The proposed change will not significantly reduce the margin of safety because it has no impact on any safety analysis assumptions. This change is administrative. As such, there is no technical change to the requirements and, therefore, there is no reduction in the margin of safety.

No Significant Hazards Considerations - NUREG-1431 Section 3.03.03

15-Mar-01

NSHC Number	NSHC Text
L.01 Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The proposed change does not involve any physical alteration of plant systems, structures or components, changes in parameters governing normal plant operation, or methods of operation. The proposed change results in a reduction of the Post Accident Monitoring Instrumentation applicability from "not in the cold or refueling shutdown conditions" to MODES 1, 2, 3. PAM instrumentation measures variables related to the diagnosis and pre-planned actions required to mitigate DBAs. The applicable DBAs are assumed to occur in MODES 1, 2 and 3. In MODES 4, 5, and 6 unit conditions are such that the likelihood of an event that would require PAM instrumentation is low; therefore the PAM instrumentation is not required to be OPERABLE in these MODES. Accordingly, there will be no significant change in the probability or consequences of accidents previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not involve any physical alteration of plant systems, structures or components, nor does it alter parameters governing normal plant operation. The proposed change does not introduce a new mode of operation. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created. 3. Does this change involve a significant reduction in a margin of safety? PAM instrumentation measures variables related to the diagnosis and pre-planned actions required to mitigate DBAs. The applicable DBAs are assumed to occur in MODES 1, 2 and 3. In MODES 4, 5, and 6 unit conditions are such that the likelihood of an event that would require PAM instrumentation is low; therefore the PAM instrumentation is not required to be OPERABLE in these MODES. Accordingly, the proposed change does not involve a significant reduction in a margin of safety.

No Significant Hazards Considerations - NUREG-1431 Section 3.03.03

15-Mar-01

NSHC Number	NSHC Text
L.02 Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The proposed change does not involve any physical alteration of plant systems, structures or components, changes in parameters governing normal plant operation, or methods of operation. The proposed change results in the deletion of the following indicators from the required Post Accident Monitoring LCO: PORV Position Indicator, PORV Block Valve Position Indicator, Safety Valve Position Indicator, AFW Pump Discharge Flowrate, Containment Sump Level (Sump A), and Main Steam Line Radiation. These variables are not identified as Type A or Category I in the PBNP Regulatory Guide 1.97 analyses. Accordingly, there will be no significant change in the probability or consequences of accidents previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not involve any physical alteration of plant systems, structures or components, nor does it alter parameters governing normal plant operation. The proposed change does not introduce a new mode of operation. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created. 3. Does this change involve a significant reduction in a margin of safety? The variables that are not being retained in ITS are not identified as Type A or Category I in the PBNP Regulatory Guide 1.97 analyses. Accordingly, the proposed change does not involve a significant reduction in a margin of safety.

No Significant Hazards Considerations - NUREG-1431 Section 3.03.03

15-Mar-01

NSHC Number	NSHC Text
L.03 Rev. E	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. The operator actions of CTS Table 15.3.5-5, items # 4, 6, 9, 11, 12, 13 and 15-27, require restoration of the minimum required channels within 48 hours, or enter actions to shutdown the unit. ITS LCO 3.3.3 Condition C will allow 7 days to restore at least one channel to an operable status before requiring actions to shutdown the unit. This results in extending the allowable outage time by 120 hours. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? This change does not result in any hardware changes. The allowable time period that a post accident monitor may be inoperable before requiring a plant shutdown is not assumed to be an initiator of any analyzed event. Extending the Completion Time to restore an instrument channel to operable status does not affect the probability of an accident. The consequences of an event occurring during the proposed Completion Time are the same as the consequences of an event occurring under the current Actions. The proposed 7 day Completion Time is reasonable considering the low probability of an event requiring PAM instrumentation operation and the availability of alternate means to obtain the required information. Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not require a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. The proposed change will provide an additional 120 hours to restore an inoperable post accident monitoring instrument channel before requiring a plant shutdown. Based on this change altering only the restoration time, and not introducing any new failure modes, it has been concluded that this change does not create the possibility of a new or different kind of accident from any accident previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? The additional 120 hours to restore a post accident monitoring instrument channel to operable status prior to requiring a unit shutdown is reasonable considering the low probability of an event requiring PAM instrumentation operation and the availability of alternate means (where available) to obtain the required information. Accordingly, the proposed change does not involve a significant reduction in a margin of safety.
L.04 Rev. E	Not used.

No Significant Hazards Considerations - NUREG-1431 Section 3.03.03

15-Mar-01

NSHC Number	NSHC Text
L.05 Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. CTS requires the restoration of an inoperable Containment High Range Radiation channel in 7 days, or prepare a special report to be submitted within 30 days. ITS LCO 3.3.3, Condition A requires restoration of an inoperable channel in 30 days, or per Condition B, prepare and submit a report to the NRC in accordance with ITS Section 5. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? This change does not result in any hardware changes. The allowable time period that the Containment High Range Radiation indication may be inoperable before submitting a special report to the NRC is not assumed to be an initiator of any analyzed event. Extending the Completion Time to restore an instrument channel to operable status does not affect the probability of an accident. The consequences of an event occurring during the proposed Completion Time are the same as the consequences of an event occurring under the current Actions. The proposed 30 day Completion Time is reasonable considering the passive nature of the instrument (no required automatic action), the low probability of an event requiring PAM instrumentation and the alternate means of monitoring the parameter. Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not involve any physical alteration of plant systems, structures or components, nor does it alter parameters governing normal plant operation. The proposed change does not introduce a new mode of operation. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created. 3. Does this change involve a significant reduction in a margin of safety? The proposed 30 day Completion Time is reasonable considering the passive nature of the instrument (no required automatic action), the low probability of an event requiring PAM instrumentation and the alternate means of monitoring the parameter. Accordingly, the proposed change does not involve a significant reduction in a margin of safety.

No Significant Hazards Considerations - NUREG-1431 Section 3.03.03

15-Mar-01

NSHC Number	NSHC Text
L.06 Rev. E	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The proposed change does not involve any physical alteration of plant systems, structures or components, changes in parameters governing normal plant operation, or methods of operation. CTS requires the restoration of an inoperable Containment Hydrogen Concentration instrument channel within 30 days, or place the unit in hot shutdown within 6 hours. ITS LCO 3.3.3 requires restoration of the inoperable channel in 30 days, or prepare and submit a report to the NRC in accordance with LCO 5.6.6, outlining the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status. The proposed action to submit a report in lieu of the shutdown requirements is reasonable considering the remaining operable channel and the passive nature of the instrument (no required automatic action). Accordingly, there will be no significant change in the probability or consequences of accidents previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not involve any physical alteration of plant systems, structures or components, nor does it alter parameters governing normal plant operation. The proposed change does not introduce a new mode of operation. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created. 3. Does this change involve a significant reduction in a margin of safety? The proposed action to submit a report in lieu of the shutdown requirements is reasonable considering the remaining operable channel, the low probability of an event requiring PAM instrumentation and the passive nature of the instrument (no required automatic action). Accordingly, the proposed change does not involve a significant reduction in a margin of safety.

No Significant Hazards Considerations - NUREG-1431 Section 3.03.03

15-Mar-01

NSHC Number	NSHC Text
L.07 Rev. E	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The proposed change does not involve any physical alteration of plant systems, structures or components, changes in parameters governing normal plant operation, or methods of operation. CTS requires the restoration of an inoperable Containment Isolation Position Indication channel in 7 days or close the valve or be in hot shutdown within the next 12 hours. ITS LCO 3.3.3 requires restoration of the inoperable channel in 30 days, or prepare and submit a report to the NRC in accordance with LCO 5.6.6, outlining the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status. The proposed actions to allow 30 days to restore the inoperable channel to OPERABLE status (instead of the current 7 day requirement) and the requirement to submit a report (in lieu of the shutdown requirement) are acceptable based on the low probability of an event requiring PAM instrumentation and the alternate means of monitoring the parameter. Accordingly, there will be no significant change in the probability or consequences of accidents previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not involve any physical alteration of plant systems, structures or components, nor does it alter parameters governing normal plant operation. The proposed change does not introduce a new mode of operation. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created. 3. Does this change involve a significant reduction in a margin of safety? The proposed action to submit a report in lieu of the shutdown requirements is reasonable considering the low probability of an event requiring PAM instrumentation and the alternate means of monitoring the parameter. Accordingly, the proposed change does not involve a significant reduction in a margin of safety.

No Significant Hazards Considerations - NUREG-1431 Section 3.03.03

15-Mar-01

NSHC Number	NSHC Text
L.08 Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. The frequency of the Channel Check surveillance requirement for the following PAM instrumentation has been changed from Shiftly or Daily to Monthly (31 Days): Pressurizer Water Level; SG Water Level; SG Pressure; CST Level; Containment Hydrogen Monitor; and Containment Pressure. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? Relaxing the frequency of performance for a surveillance does not result in any hardware changes, nor does it significantly increase the probability of occurrence for initiation of any analyzed events since the function of the equipment has remained unchanged. Surveillance tests are intended to provide assurance of continued component operability. The frequency of performance of a surveillance does not significantly increase the consequences of an accident as a change in frequency does not change the response of the equipment in performing its specified function. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not involve any physical alteration of plant systems, structures or components, nor does it alter parameters governing normal plant operation. The proposed change does not introduce a new mode of operation. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created. 3. Does this change involve a significant reduction in a margin of safety? A frequency of 31 Days is consistent with the Channel Checks currently performed on other PAM instrumentation. The Channel Check supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the LCO required channels. Accordingly, the proposed change does not involve a significant reduction in a margin of safety.

No Significant Hazards Considerations - NUREG-1431 Section 3.03.03

15-Mar-01

NSHC Number	NSHC Text
L.09 Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. CTS contains information requiring the Hydrogen Monitor Gas Calibration be performed using 2% and 6% sample gas. This information is not being retained in ITS. The ITS still retains the requirement to perform the test. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The proposed change does not involve any physical alteration of plant systems, structures or components, changes in parameters governing normal plant operation, or methods of operation. The proposed change results in the deletion of details which are not necessary to describe the actual regulatory requirement, or provide adequate protection of the public health and safety. Accordingly, there will be no significant change in the probability or consequences of accidents previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not involve any physical alteration of plant systems, structures or components, nor does it alter parameters governing normal plant operation. The proposed change does not introduce a new mode of operation. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created. 3. Does this change involve a significant reduction in a margin of safety? The deletion of details which are not necessary to describe the actual regulatory requirement, or provide adequate protection of the public health and safety, does not result in a reduction in the margin of safety.

No Significant Hazards Considerations - NUREG-1431 Section 3.03.03

15-Mar-01

NSHC Number	NSHC Text
LA Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The proposed change relocates requirements from the Technical Specifications to the Bases, FSAR, or other plant controlled documents. The Bases and FSAR will be maintained using the provisions of 10 CFR 50.59. In addition to 10 CFR 50.59 provisions, the Technical Specifications Bases are subject to the change process in the Administrative Controls Chapter of the ITS. Plant procedures and other plant controlled documents are subject to controls imposed by plant administrative procedures, which endorse applicable regulations and standards. Changes to the Bases, FSAR, or other plant controlled documents will be evaluated in accordance with the requirements of the Bases Control Program in Chapter 5.0 of the ITS, 10 CFR 50.59, or plant administrative processes. Therefore, no increase in the probability or consequences of an accident previously evaluated will be allowed. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not require a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. The proposed change will not impose any different requirements and adequate control of the information will be maintained. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? The proposed change will not reduce a margin of safety because it has no impact on any safety analysis assumptions. In addition, the requirements to be moved from the Technical Specifications to the Bases, FSAR, or other plant controlled documents are as they currently exist. Future changes to the requirements in the Bases, FSAR, or other plant controlled documents will be evaluated in accordance with the requirements of 10 CFR 50.59, the Bases Control Program in Chapter 5.0 of the ITS, or the applicable plant process and no reduction in a margin of safety will be allowed.

No Significant Hazards Considerations - NUREG-1431 Section 3.03.03

15-Mar-01

NSHC Number	NSHC Text
M Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The proposed change provides more restrictive requirements for operation of the facility. These more stringent requirements do not result in operation that will increase the probability of initiating an analyzed event and do not alter the assumptions relative to the mitigation of an accident or transient event. These more restrictive requirements continue to ensure process variables, structures, systems and components are maintained consistent with the safety analyses. Therefore, this change does not increase the probability or consequences of an accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not require a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. The proposed change does impose different requirements. However, these changes are consistent with assumptions made in the safety analysis. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? The imposition of more restrictive requirements either has no affect on or increases the margin of safety. Each change is providing additional restrictions to enhance plant safety. These changes are consistent with the safety analysis. Therefore, this change does not involve a reduction in a margin of safety.

3.3 INSTRUMENTATION

3.3.3 Post Accident Monitoring (PAM) Instrumentation

LCO 3.3.3 The PAM instrumentation for each Function in Table 3.3.3-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

----------NOTES----------

1. LCO 3.0.4 is not applicable.
2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one required channel inoperable.	A.1 Restore required channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.6.6.	Immediately
C. ----------NOTE---------- Not applicable to hydrogen monitor channels. ---------- One or more Functions with two required channels inoperable.	C.1 Restore one channel to OPERABLE status.	7 days

E
Errata #11

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Two hydrogen monitor channels inoperable.	D.1	Restore one hydrogen monitor channel to OPERABLE status.	72 hours
E. Required Action and associated Completion Time of Condition C or D not met.	E.1	Enter the Condition referenced in Table 3.3.3-1 for the channel.	Immediately
F. As required by Required Action E.1 and referenced in Table 3.3.3-1.	F.1	Be in MODE 3.	6 hours
	AND		
	F.2	Be in MODE 4.	12 hours
G. As required by Required Action E.1 and referenced in Table 3.3.3-1.	G.1	Initiate action in accordance with Specification 5.6.6.	Immediately

E
Errata #11

SURVEILLANCE REQUIREMENTS

----------NOTE----------
SR 3.3.3.1 and SR 3.3.3.3 apply to each PAM instrumentation Function in Table 3.3.3-1, except Functions 12 and 14. SR 3.3.3.1, SR 3.3.3.2 and SR 3.3.3.3 apply to Function 14 in Table 3.3.3-1. SR 3.3.3.1 and SR 3.3.3.4 apply to Function 12 in Table 3.3.3-1.

E
Errata #117

	SURVEILLANCE	FREQUENCY
SR 3.3.3.1	Perform CHANNEL CHECK for each required instrumentation channel that is normally energized.	31 days
SR 3.3.3.2	Calibrate gas portion of the Hydrogen Monitors.	92 days
SR 3.3.3.3	----------NOTE---------- CHANNEL CALIBRATION of Containment Area Radiation (High Range) detectors shall consist of verification of a response to a source. --- Perform CHANNEL CALIBRATION.	18 months
SR 3.3.3.4	Perform TADOT.	18 months

E
RAI 3.3.3-7

Table 3.3.3-1 (page 1 of 1)
Post Accident Monitoring Instrumentation

FUNCTION	REQUIRED CHANNELS	CONDITION REFERENCED FROM REQUIRED ACTION E.1	
1. Reactor Coolant System (RCS) Subcooling Monitor	2	F	
2. RCS Hot Leg Temperature (Wide Range)	2 per loop	F	
3. RCS Cold Leg Temperature (Wide Range)	2 per loop	F	
4. RCS Pressure (Wide Range)	2	F	
5. RCS Pressure (Narrow Range)	2	F	
6. Reactor Vessel Water Level (Wide Range)	2	F	
7. Reactor Vessel Water Level (Narrow Range)	2	F	
8. Containment Sump B Water Level	2	F	
9. Containment Pressure (Wide Range)	2	F	
10. Containment Pressure (Intermediate Range)	2	F	
11. Containment Pressure (Low Range)	2	F	
12. Containment Isolation Valve Position	2 per penetration flow path (a)(b)	F	
13. Containment Area Radiation (High Range)	2	G	
14. Hydrogen Monitors	2(c)	F	E Errata #127
15. Pressurizer Level	2	F	
16. Steam Generator Water Level (Wide Range)	2 per steam generator	F	
17. Steam Generator Water Level (Narrow Range)	2 per steam generator	F	
18. Steam Generator Pressure	2 per steam generator	F	
19. Condensate Storage Tank Level	2 per tank	F	
20. Core Exit Temperature — Quadrant 1	2	F	
21. Core Exit Temperature — Quadrant 2	2	F	
22. Core Exit Temperature — Quadrant 3	2	F	
23. Core Exit Temperature — Quadrant 4	2	F	
24. Auxiliary Feedwater Flow	2	F	E RAI 3.3.3-1 RAI 3.3.3-2
25. Refueling Water Storage Tank Level	2	F	

(a) Not required for isolation valves whose associated penetration is isolated by at least one closed and deactivated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.

(b) Only one position indication channel is required for penetration flow paths with only one installed control room indication channel.

(c) Each monitor shall be powered from an independent power supply. E Errata #127

B 3.3 INSTRUMENTATION

B 3.3.3 Post Accident Monitoring (PAM) Instrumentation

BASES

BACKGROUND

The primary purpose of the PAM instrumentation is to display unit variables that provide information required by the control room operators during accident situations. This information provides the necessary support for the operator to take the manual actions for which no automatic control is provided and that are required for safety systems to accomplish their safety functions for Design Basis Accidents (DBAs).

The OPERABILITY of the accident monitoring instrumentation ensures that there is sufficient information available on selected unit parameters to monitor and to assess unit status and behavior following an accident.

The availability of accident monitoring instrumentation is important so that responses to corrective actions can be observed and the need for, and magnitude of, further actions can be determined. These essential instruments identified in Reference 1 address the recommendations of Regulatory Guide 1.97 (Ref. 2) as required by Supplement 1 to NUREG-0737 (Ref. 3).

The instrument channels required to be OPERABLE by this LCO include two classes of parameters identified during unit specific implementation of Regulatory Guide 1.97 as Type A and Category I variables.

Type A variables are included in this LCO because they provide the primary information required for the control room operator to take specific manually controlled actions for which no automatic control is provided, and that are required for safety systems to accomplish their safety functions for DBAs.

Category I variables are the key variables deemed risk significant because they are needed to:

- Determine whether other systems important to safety are performing their intended functions;
- Provide information to the operators that will enable them to determine the likelihood of a gross breach of the barriers to radioactivity release; and

BASES

BACKGROUND (continued)

- Provide information regarding the release of radioactive materials to allow for early indication of the need to initiate action necessary to protect the public, and to estimate the magnitude of any impending threat.

These key variables are identified by the Regulatory Guide 1.97 analyses (Ref. 1). These analyses identify the unit specific Type A and Category I variables and provide justification for deviating from the NRC proposed list of Category I variables.

The specific instrument Functions listed in Table 3.3.3-1 are discussed in the LCO section.

APPLICABLE SAFETY ANALYSES

The PAM instrumentation ensures the operability of Regulatory Guide 1.97 Type A and Category I variables so that the control room operating staff can:

- Perform the diagnosis specified in the emergency operating procedures (these variables are restricted to preplanned actions for the primary success path of DBAs), e.g., loss of coolant accident (LOCA);
- Take the specified, pre-planned, manually controlled actions, for which no automatic control is provided, and that are required for safety systems to accomplish their safety function;
- Determine whether systems important to safety are performing their intended functions;
- Determine the likelihood of a gross breach of the barriers to radioactivity release;
- Determine if a gross breach of a barrier has occurred; and
- Initiate action necessary to protect the public and to estimate the magnitude of any impending threat.

PAM instrumentation that meets the definition of Type A in Regulatory Guide 1.97 satisfies Criterion 3 of the NRC Policy Statement. Category I, non-Type A, instrumentation must be retained in TS because it is intended to assist operators in minimizing the consequences of accidents. Therefore, Category I, non-Type A, variables are important for reducing public risk.

BASES

LCO

The PAM instrumentation LCO provides OPERABILITY requirements for Regulatory Guide 1.97 Type A monitors, which provide information required by the control room operators to perform certain manual actions specified in the unit Emergency Operating Procedures. These manual actions ensure that a system can accomplish its safety function, and are credited in the safety analyses. Additionally, this LCO addresses Regulatory Guide 1.97 instruments that have been designated Category I, non-Type A.

The OPERABILITY of the PAM instrumentation ensures there is sufficient information available on selected unit parameters to monitor and assess unit status following an accident. This capability is consistent with the recommendations of Reference 2.

LCO 3.3.3 requires two OPERABLE channels for most Functions. Two OPERABLE channels ensure no single failure prevents operators from getting the information necessary for them to determine the safety status of the unit, and to bring the unit to and maintain it in a safe condition following an accident.

Furthermore, OPERABILITY of two channels allows a CHANNEL CHECK during the post accident phase to confirm the validity of displayed information.

One exception to the two channel requirement is Containment Isolation Valve (CIV) Position. In this case, the important information is the status of the containment penetrations. The LCO requires one position indicator for each active CIV. This is sufficient to redundantly verify the isolation status of each isolable penetration either via indicated status of the active valve and prior knowledge of a passive valve, or via system boundary status. If a normally active CIV is known to be closed and deactivated, position indication is not needed to determine status. Therefore, the position indication for valves in this state is not required to be OPERABLE.

Another exception to the two channel requirement is AFW flow, because it is a backup indication to Steam Generator Water Level (Narrow Range).

Table 3.3.3-1 provides a list of variables identified by the Regulatory Guide 1.97 (Ref. 1) analyses. Table 3.3.3-1 lists all Type A and Category I variables identified by the Regulatory Guide 1.97 analyses, as amended by the NRC's SER.

BASES

LCO (continued)

Type A and Category I variables are required to meet Regulatory Guide 1.97 Category I (Ref. 2) design and qualification requirements for seismic and environmental qualification, single failure criterion, utilization of emergency standby power, immediately accessible display, continuous readout, and recording of display.

Listed below are discussions of the specified instrument Functions listed in Table 3.3.3-1.

1. Reactor Coolant System (RCS) Subcooling Monitor

RCS Subcooling Monitor is a Type A variable provided for verification of core cooling and long term surveillance of RCS integrity. The RCS Subcooling Monitor is used to provide information to the operator on subcooling, derived from RCS Hot Leg Temperature or Core Exit Thermocouples, and RCS pressure. RCS Subcooling margin is used to determine whether to terminate SI, if still in progress, or to reinitiate SI if it has stopped. RCS Subcooling margin is also used for plant stabilization and cooldown control.

2, 3. Reactor Coolant System (RCS) Hot and Cold Leg Temperatures (Wide Range)

RCS Hot and Cold Leg Temperatures (Wide Range) are Category I variables provided for verification of core cooling and long term surveillance.

RCS hot and cold leg temperatures are used to determine RCS subcooling margin and verify adequate core cooling. RCS subcooling margin will allow termination of safety injection (SI), if still in progress, or reinitiation of SI if it has been stopped. RCS subcooling margin is also used for unit stabilization and cooldown control.

In addition, RCS cold leg temperature is used in conjunction with RCS hot leg temperature to verify the unit conditions necessary to establish natural circulation in the RCS.

Temperature inputs are provided by two independent temperature resistance elements and associated transmitters in each loop. The channels provide indication over a range of 50°F to 750°F.

4, 5. Reactor Coolant System Pressure (Wide and Narrow Range)

RCS narrow range pressure is a Category I variable provided for verification of core cooling and RCS integrity long term surveillance.

BASES

LCO (continued)

RCS wide range pressure is a Type A variable used to select high-head or low-head Safety Injection for recirculation.

RCS pressure is used to verify delivery of SI flow to RCS from at least one train when the RCS pressure is below the pump shutoff head. RCS pressure is also used to verify closure of manually closed spray line valves and pressurizer power operated relief valves (PORVs).

In addition to these verifications, RCS pressure is used for determining RCS subcooling margin. RCS subcooling margin will allow termination of SI, if still in progress, or reinitiation of SI if it has been stopped. RCS pressure can also be used:

- to determine whether to terminate actuated SI or to reinitiate stopped SI;
- to determine when to reset SI and shut off low head SI;
- to manually restart low head SI;
- as reactor coolant pump (RCP) trip criteria; and
- to make a determination on the nature of the accident in progress and where to go next in the procedure.

RCS subcooling margin is also used for unit stabilization and cooldown control.

RCS pressure is also related to three decisions about depressurization. They are:

- to determine whether to proceed with primary system depressurization;
- to verify termination of depressurization; and
- to determine whether to close accumulator isolation valves during a controlled cooldown/depressurization.

A final use of RCS pressure is to determine whether to operate the pressurizer heaters.

RCS pressure is a Type A variable because the operator uses this indication to monitor the cooldown of the RCS following a steam generator tube rupture (SGTR) or small break LOCA. Operator actions to maintain a controlled cooldown, such as adjusting steam

BASES

LCO (continued)

generator (SG) pressure or level, would use this indication. Furthermore, RCS pressure is one factor that may be used in decisions to terminate RCP operation.

6, 7. Reactor Vessel Water Level

Reactor Vessel Water Level is provided for verification and long term surveillance of core cooling. It is also used for accident diagnosis and to determine reactor coolant inventory adequacy.

The Reactor Vessel Water Level Monitoring System provides a direct measurement of the collapsed liquid level above the fuel alignment plate. The collapsed level represents the amount of liquid mass that is in the reactor vessel above the core. Measurement of the collapsed water level is selected because it is a direct indication of the water inventory.

8. Containment Sump B Water Level

Containment Sump B Water Level is provided for verification and long term surveillance of RCS integrity.

Containment Sump B Water Level is used to determine:

- containment sump B level accident diagnosis;
- when to begin the recirculation procedure; and
- whether to terminate SI, if still in progress.

9, 10, 11. Containment Pressure (Wide, Intermediate and Low Range)

Containment pressure is a Type A variable used to correct RCS pressure in a post LOCA condition.

Containment Pressure is also provided for verification of RCS and containment OPERABILITY.

12. Containment Isolation Valve Position

CIV Position is provided for verification of Containment OPERABILITY, and Containment isolation.

When used to verify Containment isolation, the important information is the isolation status of the containment penetrations. The LCO requires one channel of valve position indication in the control room to be OPERABLE for each active CIV in a containment

BASES

LCO (continued)

penetration flow path, i.e., two total channels of CIV position indication for a penetration flow path with two active valves. For containment penetrations with only one active CIV having control room indication, Note (b) requires a single channel of valve position indication to be OPERABLE. This is sufficient to redundantly verify the isolation status of each isolable penetration either via indicated status of the active valve, as applicable, and prior knowledge of a passive valve, or via system boundary status. If a normally active CIV is known to be closed and deactivated, position indication is not needed to determine status. Therefore, the position indication for valves in this state is not required to be OPERABLE. Note (a) to the Required Channels states that the Function is not required for isolation valves whose associated penetration is isolated by at least one closed and deactivated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.

13. Containment Area Radiation (High Range)

Containment Area Radiation is provided to monitor for the potential of significant radiation releases and to provide release assessment for use by operators in determining the need to invoke site emergency plans. Containment radiation level is used to determine if a high energy line break (HELB) has occurred, and whether the event is inside or outside of containment.

14. Hydrogen Monitors

Hydrogen Monitors are provided to detect high hydrogen concentration conditions that represent a potential for containment breach from a hydrogen explosion. This variable is also important in verifying the adequacy of mitigating actions.

There are a total of four hydrogen monitors, two powered from the white instrument bus and two powered from the yellow instrument bus. The LCO requires two hydrogen monitors to be OPERABLE, powered from independent power supplies. Therefore, one hydrogen monitor powered from the white instrument bus and one hydrogen monitor powered from the yellow instrument bus are required to be OPERABLE.

E
Errata #127

15. Pressurizer Level

Pressurizer Level is used to determine whether to terminate SI, if still in progress, or to reinitiate SI if it has been stopped. Knowledge of pressurizer water level is also used to verify the unit conditions necessary to establish natural circulation in the RCS and to verify that the unit is maintained in a safe shutdown condition.

BASES

LCO (continued)

16. Steam Generator Water Level (Wide Range)

SG Water Level is provided to monitor operation of decay heat removal via the SGs. The Category I indication of SG level is the wide range level instrumentation. The wide range level covers a span of 0 inches to 520 inches above the lower tubesheet. The measured differential pressure is displayed in inches of water at 68°F. Redundant monitoring capability is provided by two trains of instrumentation. The level signal is input to the unit computer, a control room indicator, and an indicator in the AFW Pump Room.

17. Steam Generator Water Level (Narrow Range)

Steam Generator Water Level (Narrow Range) is a Type A variable provided to aid operators in the control of AFW Flow to maintain the SGs as a heat sink.

18. Steam Generator Pressure

Steam Generator Pressure is a Type A variable provided to detect and mitigate a SGTR event. The signals from transmitters are calibrated for a range of 0 psig to 1400 psig. Redundant monitoring capability is provided by three available trains of instrumentation for each steam generator.

19. Condensate Storage Tank (CST) Level

CST Level is provided to ensure water supply for auxiliary feedwater (AFW). The CST consists of two identical tanks connected by a common outlet header. Inventory is monitored by two 0 foot to 21.5 foot level indicators per tank. CST Level is displayed on a control room indicator, strip chart recorder, and unit computer. In addition, a control room annunciator alarms on low level.

The DBAs that require AFW are the loss of electric power, loss of normal feedwater, steam line break (SLB), and small break LOCA.

The CST is the initial source of water for the AFW System. However, as the CST is depleted, manual operator action is necessary to replenish the CST or align suction to the AFW pumps from Service Water.

20, 21, 22, 23. Core Exit Temperature

Core Exit Temperature is provided for verification and long term surveillance of core cooling.

BASES

LCO (continued)

An evaluation was made of the minimum number of valid core exit thermocouples (CET) necessary for measuring core cooling. The evaluation determined the reduced complement of CETs necessary to detect initial core recovery and trend the ensuing core heatup. The evaluations account for core nonuniformities, including incore effects of the radial decay power distribution, excore effects of condensate runback in the hot legs, and nonuniform inlet temperatures. Based on these evaluations, adequate core cooling is ensured with two valid Core Exit Temperature channels per quadrant. The CET pair are oriented radially to permit evaluation of core radial decay power distribution. Core Exit Temperature is used to control RCS pressure and temperature in the mitigation of a SGTR event.

Two OPERABLE channels of Core Exit Temperature are required in each quadrant to provide indication of radial distribution of the coolant temperature rise across representative regions of the core.

24. Auxiliary Feedwater Flow

AFW Flow is provided to monitor operation of decay heat removal via the SGs.

The AFW Flow to each SG is determined from a differential pressure measurement calibrated for a range of 0 gpm to 500 gpm. Each differential pressure transmitter provides an input to a control room indicator and the unit computer. Since the primary indication used by the operator during an accident is the control room indicator, the PAM specification deals specifically with this portion of the instrument channel.

AFW flow is used three ways:

- to verify delivery of AFW flow to the SGs and verify AFW flow is isolated to a faulted SG;
- to determine whether to terminate SI if still in progress, in conjunction with SG water level (narrow range); and
- to regulate AFW flow so that the SG tubes remain covered.

AFW flow is a Type A variable because operator action is required to throttle flow during an SLB accident to prevent the AFW pumps from operating in runout conditions. AFW flow is also used by the operator to verify that the AFW System is delivering the correct flow to each SG. However, the primary indication used by the operator to ensure an adequate inventory is SG level.

BASES

LCO (continued)

25. Refueling Water Storage Tank (RWST) Level

RWST Level is a Type A variable provided for verifying a water source to the SI System during the injection phase of a LOCA, and to indicate when manual switchover to recirculation is required on decreasing level. The RWST Level accuracy is established to allow an adequate supply of water to the SI pumps during the switchover to the recirculation phase of an accident. A high degree of accuracy is required to maximize the time available to the operator to complete the switchover to the sump recirculation phase and ensure sufficient water is available to maintain adequate net positive suction head (NPSH) to operating pumps.

APPLICABILITY

The PAM instrumentation LCO is applicable in MODES 1, 2, and 3. These variables are related to the diagnosis and pre-planned actions required to mitigate DBAs. The applicable DBAs are assumed to occur in MODES 1, 2, and 3. In MODES 4, 5, and 6, unit conditions are such that the likelihood of an event that would require PAM instrumentation is low; therefore, the PAM instrumentation is not required to be OPERABLE in these MODES.

ACTIONS

Note 1 has been added in the ACTIONS to exclude the MODE change restriction of LCO 3.0.4. This exception allows entry into the applicable MODE while relying on the ACTIONS even though the ACTIONS may eventually require unit shutdown. This exception is acceptable due to the passive function of the instruments, the operator's ability to respond to an accident using alternate instruments and methods, and the low probability of an event requiring these instruments.

Note 2 has been added in the ACTIONS to clarify the application of Completion Time rules. The Conditions of this Specification may be entered independently for each Function listed on Table 3.3.3-1. The Completion Time(s) of the inoperable channel(s) of a Function will be tracked separately for each Function starting from the time the Condition was entered for that Function.

A.1

Condition A applies when one or more Functions have one required channel that is inoperable. Required Action A.1 requires restoring the inoperable channel to OPERABLE status within 30 days. The 30 day Completion Time is based on operating experience and takes into account the remaining OPERABLE channel (or in the case of a Function that has only one required channel, other non-Regulatory Guide 1.97 instrument channels to monitor the Function), the passive

BASES

ACTIONS (continued) nature of the instrument (no critical automatic action is assumed to occur from these instruments), and the low probability of an event requiring PAM instrumentation during this interval.

B.1

Condition B applies when the Required Action and associated Completion Time for Condition A are not met. This Required Action specifies initiation of actions in Specification 5.6.6, which requires a written report to be submitted to the NRC immediately. This report discusses the results of the root cause evaluation of the inoperability and identifies proposed restorative actions. This action is appropriate in lieu of a shutdown requirement since alternative actions are identified before loss of functional capability, and given the likelihood of unit conditions that would require information provided by this instrumentation.

E
Errata #11

C.1

Condition C applies when one or more Functions have two inoperable required channels (i.e., two channels inoperable in the same Function). Required Action C.1 requires restoring one channel in the Function(s) to OPERABLE status within 7 days. The Completion Time of 7 days is based on the relatively low probability of an event requiring PAM instrument operation and the availability of alternate means to obtain the required information. Continuous operation with two required channels inoperable in a Function is not acceptable because the alternate indications may not fully meet all performance qualification requirements applied to the PAM instrumentation. Therefore, requiring restoration of one inoperable channel of the Function limits the risk that the PAM Function will be in a degraded condition should an accident occur. Condition C is modified by a Note that excludes hydrogen monitor channels.

D.1

Condition D applies when two hydrogen monitor channels are inoperable. Required Action D.1 requires restoring one hydrogen monitor channel to OPERABLE status within 72 hours. The 72 hour Completion Time is reasonable based on the backup capability of the Post Accident Sampling System to monitor the hydrogen concentration for evaluation of core damage and to provide information for operator decisions. Also, it is unlikely that a LOCA (which would cause core damage) would occur during this time.

BASES

ACTIONS (continued) E.1

Condition E applies when the Required Action and associated Completion Time of Condition C or D are not met. Required Action E.1 requires entering the appropriate Condition referenced in Table 3.3.3-1 for the channel immediately. The applicable Condition referenced in the Table is Function dependent. Each time an inoperable channel has not met any Required Action of Condition C or D, and the associated Completion Time has expired, Condition E is entered for that channel and provides for transfer to the appropriate subsequent Condition.

F.1 and F.2

If the Required Action and associated Completion Time of Conditions C or D are not met and Table 3.3.3-1 directs entry into Condition F, the unit must be brought to a MODE where the requirements of this LCO do not apply. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and MODE 4 within 12 hours.

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

G.1

Alternate means of monitoring Containment Area Radiation have been developed and tested. These alternate means may be used if the normal PAM channel cannot be restored to OPERABLE status within the allotted time. If these alternate means are used, the Required Action is not to shut down the unit but rather to follow the directions of Specification 5.6.6, in the Administrative Controls section of the TS. The report provided to the NRC should discuss the alternate means used, describe the degree to which the alternate means are equivalent to the installed PAM channels, justify the areas in which they are not equivalent, and provide a schedule for restoring the normal PAM channels.

E Errata #11

SURVEILLANCE REQUIREMENTS

A Note has been added to the SR Table to clarify that SR 3.3.3.1 and SR 3.3.3.3 apply to each PAM instrumentation Function in Table 3.3.3-1, except Functions 12 and 14. SR 3.3.3.1, SR 3.3.3.2 and SR 3.3.3.3 apply to Function 14 in Table 3.3.3-1. SR 3.3.3.1 and SR 3.3.3.4 apply to Function 12 in Table 3.3.3-1.

E Errata #117

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.3.1

Performance of the CHANNEL CHECK once every 31 days ensures that a gross instrumentation failure has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the two instrument channels could be an indication of excessive instrument drift in one of the channels or of something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION. The high radiation instrumentation should be compared to similar unit instruments located throughout the unit.

Agreement criteria are determined by the unit staff, based on a combination of the channel instrument uncertainties, including isolation, indication, and readability. If a channel is outside the criteria, it may be an indication that the sensor or the signal processing equipment has drifted outside its limit. If the channels are within the criteria, it is an indication that the channels are OPERABLE.

As specified in the SR, a CHANNEL CHECK is only required for those channels that are normally energized.

The Frequency of 31 days is based on operating experience that demonstrates that channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the LCO required channels.

SR 3.3.3.2

SR 3.3.3.2 requires calibration of the gas portion of the hydrogen monitors every 92 days. The calibration shall consist of a verification of the monitors response to a known concentration of hydrogen gas. The Frequency of 92 days is reasonable based on operating experience to ensure the OPERABILITY of the monitors.

SR 3.3.3.3

A CHANNEL CALIBRATION is performed every 18 months, or approximately at every refueling. CHANNEL CALIBRATION is a complete check of the instrument loop, including the sensor. The test verifies that the channel responds to measured parameter with the necessary range and accuracy. This SR is modified by a Note that

BASES

SURVEILLANCE REQUIREMENTS (continued)

specifies the CHANNEL CALIBRATION of the Containment Area Radiation (High Range) detectors shall consist of a verification of a response to a source. Whenever a sensing element is replaced, the next required CHANNEL CALIBRATION of the Core Exit thermocouple sensors is accomplished by an inplace cross calibration that compares the other sensing elements with the recently installed sensing element. The Frequency is based on operating experience and consistency with the typical industry refueling cycle.

E
RAI 3.3.3-7
Additional

SR 3.3.3.4

SR 3.3.3.4 is the performance of a TADOT of Containment Isolation Valve Position Indication. This TADOT is performed every 18 months. The test shall independently verify the OPERABILITY of containment isolation valve position indication against the actual position of the valves.

The Frequency is based on the known reliability of the Functions and has been shown to be acceptable through operating experience.

REFERENCES

1. NRC SER Letter, "Conformance to Regulatory Guide 1.97 for the Point Beach Nuclear Plant Units 1 and 2," July 11, 1986.
2. Regulatory Guide 1.97, Revision 2, December 1980.
3. NUREG-0737, Supplement 1, "TMI Action Items."

Description of Changes - NUREG-1431 Section 3.03.05

15-Mar-01

DOC Number	DOC Text

A.01
Rev. A

In the conversion of Point Beach current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted which do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the Standard Technical Specifications, Westinghouse Plants, NUREG-1431, Revision 1 (i.e., Improved Standard Technical Specifications (ISTS)).

CTS:	ITS:
15.03.05 T 15.03.05-01 09	LCO 3.03.04.b
15.03.05 T 15.03.05-01 10.A	LCO 3.03.04.a
15.03.05 T 15.03.05-01 10.B	LCO 3.03.04.c
15.03.05 T 15.03.05-03 04.A.I**	LCO 3.03.04 COND A LCO 3.03.04 COND A RA A.1
15.03.05 T 15.03.05-03 04.A.I***	LCO 3.03.04 COND C LCO 3.03.04 COND C RA C.1
15.03.05 T 15.03.05-03 04.A.II**	LCO 3.03.04 COND A LCO 3.03.04 COND A RA A.1
15.03.05 T 15.03.05-03 04.A.II***	LCO 3.03.04 COND C LCO 3.03.04 COND C RA C.1
15.03.05 T 15.03.05-03 04.B.I**	LCO 3.03.04 COND A LCO 3.03.04 COND A RA A.1
15.03.05 T 15.03.05-03 NOTE **	LCO 3.03.04 COND A LCO 3.03.04 COND A RA A.1
15.03.05 T 15.03.05-03 NOTE ***	LCO 3.03.04 COND NOTE LCO 3.03.04 COND C LCO 3.03.04 COND C RA C.1
15.04.01 T 15.04.01-01 13.A	SR 3.03.04.01 SR 3.03.04.02 SR 3.03.04.02 NOTE SR 3.03.04.03A
15.04.01 T 15.04.01-01 13.B	SR 3.03.04.01 SR 3.03.04.02 SR 3.03.04.02 NOTE SR 3.03.04.03B
15.04.01 T 15.04.01-01 13.C	SR 3.03.04.01 SR 3.03.04.02 SR 3.03.04.02 NOTE SR 3.03.04.03C

Description of Changes - NUREG-1431 Section 3.03.05

15-Mar-01

DOC Number	DOC Text

A.02
Rev. A

CTS Table 15.3.5-3, "Minimum Operable Channels" column is changed to "Required Channels". Per CTS LCO 15.3.5.c, if the number of operable channels for a particular subsystem is less than that required by the "Minimum Operable Channels" column of Table 15.3.5-3, operation shall be limited according to the requirements of the "Operator Action" column of the same Table. Furthermore, many of the items in Table 15.3.5-3 have a note associated with them in the "Minimum Operable Channels" column, that limits unit operation if the number of operable channels for that subsystem is one less than the total number of channels. Proposed ITS 3.3.4 combines these requirements by specifying the number of required channels for each function. The Conditions and associated Required Actions of ITS LCO 3.3.4 will provide required actions for inoperable channel(s). Therefore, instead of providing an operation limiting note applicable to the functions, that refers to the total number of channels for that function in another column, proposed ITS LCO 3.3.4 states the number of channels required for each function to meet OPERABILITY requirements, below which Required Actions are taken to mitigate the Conditions.

CTS:	ITS:
15.03.05 T 15.03.05-03 04.A.I	LCO 3.03.04.b
15.03.05 T 15.03.05-03 04.A.II	LCO 3.03.04.a
15.03.05 T 15.03.05-03 04.B.I	LCO 3.03.04.c

A.03
Rev. A

CTS Table 15.3.5-3, "Permissible Bypass Conditions" column provides a place to list conditions where each trip function is allowed to be bypassed. There are no permissible bypass conditions listed for the Safety-Related Electrical Loads in CTS Table 15.3.5-3. This space has been utilized to specify the Applicable MODES under which these instruments are required OPERABLE. The MODES specified for each function are based on the safety analyses assumptions made for that function, or the diverse protection that function provides.

CTS:	ITS:
15.03.05 T 15.03.05-03	LCO 3.03.04
15.03.05 T 15.03.05-03 04.A.I	LCO 3.03.04.b
15.03.05 T 15.03.05-03 04.A.II	LCO 3.03.04.a
15.03.05 T 15.03.05-03 04.B.I	LCO 3.03.04.c

A.04
Rev. E

Not used.

CTS:	ITS:
N/A	N/A

Description of Changes - NUREG-1431 Section 3.03.05

15-Mar-01

DOC Number	DOC Text	
A.05 Rev. A	CTS Table 15.3.5-3, Note ***** specifies use of the 3/bus specification for each A05 and A06 bus that has been modified to the 2 out of 3 logic for the loss of voltage protection function. Proposed ITS LCO 3.3.4 requires 3 operable channels per A05 and A06 bus loss of voltage protection function. This change is administrative as all A05 and A06 buses have been modified to the 2 out of 3 logic configuration for the loss of voltage protection function. Accordingly, deletion of this Note is acceptable, as the 2/bus specification no longer imposes any operational limitations.	
	CTS:	**ITS:**
	15.03.05 T 15.03.05-03 04.A.II*****	N/A
	15.03.05 T 15.03.05-03 NOTE *****	N/A
L.01 Rev. E	Not used.	
	CTS:	**ITS:**
	N/A	N/A
L.02 Rev. E	Not used.	
	CTS:	**ITS:**
	N/A	N/A
L.03 Rev. A	The Operator Actions of CTS Table 15.3.5-3, items 4.a.i and 4.a.ii, have been revised. Table 15.3.5-3, Note ***, requires the declaration of the associated standby emergency power supply inoperable for the affected bus and subsequent entry into the applicable LCO. Proposed ITS LCO 3.3.4, Condition B is entered with two or more inoperable LOP DG start and load sequence instrumentation channels per bus. Required Action B.1 allows 1 hour to restore all but one channel to OPERABLE status. If this required action and associated Completion Time are not met, Condition C is entered. Required Action C.1 requires the immediate entry into the applicable condition(s) and required action(s) for the associated DG made inoperable by LOP DG start and load sequence instrumentation. This change results in a relaxation of the current requirements, but is acceptable because the additional hour takes into account the low probability of an event requiring an LOP start occurring during this interval.	
	CTS:	**ITS:**
	NEW	LCO 3.03.04 COND B LCO 3.03.04 COND B RA B.1

Description of Changes - NUREG-1431 Section 3.03.05

15-Mar-01

DOC Number	DOC Text
LA.01 Rev. A	The information in CTS Table 15.3.5-1, "Channel" column contains details of design which are not directly pertinent to describe the actual regulatory requirement. These details are not necessary to provide adequate protection of the public health and safety. This information has been moved to the FSAR. Changes to the FSAR will be controlled in accordance with the 10 CFR 50.59 process.

CTS:	ITS:
15.03.05 T 15.03.05-01	FSAR

DOC Number	DOC Text
LA.02 Rev. A	The information in CTS Table 15.3.5-3, "No. of Channels" and "No. of Channels to Trip" columns contain details of design which are not directly pertinent to describe the actual regulatory requirement. These details are not necessary to provide adequate protection of the public health and safety. This information has been moved to the FSAR. Changes to the FSAR will be controlled in accordance with the 10 CFR 50.59 process.

CTS:	ITS:
15.03.05 T 15.03.05-03	FSAR

DOC Number	DOC Text
M.01 Rev. A	CTS Table 15.3.5-3, item 4.b.i, 480 V Buses (B03, B04) - Loss of Voltage, requires the unit be in hot shutdown in 8 hours, if the minimum operable channels requirement cannot be met. This required action is modified by Note *, which requires the unit be in cold shutdown within 48 hours of the event, if the minimum conditions are not met within 24 hours after reaching hot shutdown. Proposed ITS LCO 3.3.4 Condition D is entered when two or more 480 V loss of voltage channels per bus are inoperable. Required Action D.1 requires the restoration of all but one of the channels within 1 hour. If this action cannot be completed in 1 hour, Condition E is entered, requiring the unit be in MODE 3 within 6 hours and MODE 5 in 36 hours. This results in additional restrictions on unit operation, but is a reasonable amount of time, based on operating experience to place the unit in the required conditions from full power in an orderly manner and without challenging unit systems.

CTS:	ITS:
15.03.05 T 15.03.05-03 04.B.I	LCO 3.03.04 COND D LCO 3.03.04 COND D RA D.1
15.03.05 T 15.03.05-03 04.B.I*	LCO 3.03.04 COND D RA D.1
15.03.05 T 15.03.05-03 NOTE *	LCO 3.03.04 COND E LCO 3.03.04 COND E RA E.1 LCO 3.03.04 COND E RA E.2

TABLE 15.3.5-3 (continued)
ENGINEERED SAFETY FEATURES

NO.	FUNCTIONAL UNIT	1 ~~NO. OF CHANNELS~~	2 ~~NO. OF CHANNELS TO TRIP~~	3 MINIMUM OPERABLE CHANNELS	4 PERMISSIBLE BYPASS CONDITIONS	OPERATOR ACTION IF CONDITIONS OF COLUMN 3 CANNOT BE MET
b.	Start Turbine-Driven Pump					
i.	Undervoltage on 4KV Buses (A01 & A02)	2/each bus	1/each bus	1/each bus		< See LCO 3.3.2 > Be in hot shutdown in 8 hours*
ii.	Low Low Steam Gen. Water Level	3/SG	2/each SG	2/SG**		Be in hot shutdown in 8 hours*
4.	SAFETY-RELATED ELECTRICAL LOADS					
a.	4.16KV Buses (A05, A06)					
i.	Degraded Voltage	~~3/bus~~	~~2/bus~~	2/bus**	1,2,3,4, #	*** Insert A L.3
ii.	Loss of Voltage	~~2/bus~~	~~1/bus~~	~~1/bus~~	A.5 ***	***
		~~3/bus~~	~~2/bus~~	2/bus**	1,2,3,4, #	A.3 Insert B M.1
b.	480V Buses (B03, B04)					
i.	Loss of Voltage	~~3/bus~~	~~2/bus~~	2/bus**	1,2,3,4, #	Be in hot shutdown in 8 hours*

* If minimum conditions are not met within 24 hours after reaching hot shutdown, the unit shall be in cold shutdown within 48 hours of the event causing the unit shutdown.

** If a channel is determined to be inoperable, resulting in one less than the total number of channels being operable, power operation may continue if the following conditions are met:
1. The minimum number of operable channels is still satisfied.
2. The affected channel is placed in trip within 1 hour.

*** Declare the associated standby emergency power supply inoperable for the affected bus. The applicable Limiting Condition for Operation (LCO) shall be entered. Separate LCOs may be entered for the Degraded Voltage and Loss of Voltage functions.

**** Both switches must be activated simultaneously. < See LCO 3.3.2 >

***** ~~Use the 3/bus specification for each A05 and A06 bus that has been modified to the 2 out of 3 logic for the loss of voltage protection function.~~

\# When associated DG is required to be operable by LCO 3.8.2, "AC Sources-Shutdown."

INSERT A

Restore all but one inoperable channel to OPERABLE status within 1 hour when two or more channels are inoperable, AND place one inoperable channel in the tripped condition within 1 hour, OR immediately enter applicable Condition(s) and Required Action(s) for the associated DG made inoperable by LOP DG start and load sequence instrumentation. | E RAI 3.3.5-1

Insert B

Restore all but one inoperable channel to OPERABLE status within 1 hour, when two or more channels are inoperable, AND place one inoperable channel in the tripped condition within 1 hour, OR place the unit in MODE 3 in the next 6 hours and in MODE 5 in 36 hours. | E RAI 3.3.5-1

Justification For Deviations - NUREG-1431 Section 3.03.05

15-Mar-01

JFD Number	JFD Text
09 Rev. A	The ITS definition of TADOT has been modified to not include verification of the setpoint. Therefore ITS SR 3.3.4.2 Bases have been modified to reflect this change. **ITS:** B 3.03.04 **NUREG:** B 3.03.05
10 Rev. E	The time allowed to place an inoperable channel in the tripped condition has been changed from 6 hours to 1 hour. The 6 hour completion time of NUREG-1431, Required Action A.1 is based upon the analysis contained in WCAP-10271-P-A, Supplement 2. The SERs for WCAP-10271 require individual plants to confirm the applicability of the generic analysis of the WCAP. Point Beach Nuclear Plant has not confirmed the applicability of the generic analysis of WCAP-10271 and therefore, will retain the Completion Time requirements of the current licensing basis. **ITS:** LCO 3.03.04 COND A RA A.1 **NUREG:** LCO 3.03.05 COND A RA A.1
11 Rev. E	The Note modifying NUREG-1431, Required Action A.1 has not been retained in ITS. The provision to allow bypassing the inoperable channel for 4 hours for surveillance testing is based on the analysis contained in WCAP-10271-P-A, Supplement 2. The SERs for WCAP-10271 require individual plants to confirm the applicability of the generic analysis of the WCAP. Point Beach has not confirmed the appliability of the generic analysis of WCAP-10271, and therefore will not adopt this Note. **ITS:** LCO 3.03.04 COND A NOTE **NUREG:** LCO 3.03.05 COND A NOTE

LOP DG Start Instrumentation and Load Sequence 3.3.5

3.3 INSTRUMENTATION

3.3.5 Loss of Power (LOP) Diesel Generator (DG) Start Instrumentation

LCO 3.3.5 [Three] channels per bus of th e loss of voltage Function ~~and~~ [three] channels per bus of the degraded voltage Function shall be OPERABLE.

Replace with Insert 3.3.5-1.

APPLICABILITY: MODES 1, 2, 3, and 4,
When associated DG is required to be OPERABLE by LCO 3.8.2, "AC Sources – Shutdown."

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one channel per bus inoperable.	A.1 ~~----------NOTE---------- The inoperable channel may be bypassed for up to 4 hours for surveillance testing of other channels. ----------~~ Place channel in trip.	1 hour 6 hours
B. ~~One or more Functions with~~ two or more channels per bus inoperable.	B.1 Restore all but one channel to OPERABLE status.	1 hour

(continued)

RAI 3.3.5-1
RAI 3.3.5-2

4.16 kV loss of voltage or 4.16 kV degraded voltage

BASES

LCO (continued)

the [three] channels must be OPERABLE whenever the as sociated DG is required to be OPERABLE to ensure that the automatic start of the DG is available when needed. Loss of the LOP DG Start Instrumentation Function could result in the delay of safety systems initiation when required. This could lead to unacceptable consequences during accidents. During the loss of offsite power the DG powers the motor driven auxiliary feedwater pumps. Failure of these pumps to start would leave only one turbine driven pump, as well as an increased potential for a loss of decay heat removal through the secondary system.

APPLICABILITY

The LOP DG Start Instrumentation Functions are required in MODES 1, 2, 3, and 4 because ESF Functions are designed to provide protection in these MODES. Actuation in MODE 5 or 6 is required whenever the required DG must be OPERABLE so that it can perform its function on an LOP or degraded power to the vital bus.

ACTIONS

In the event a channel's Trip Setpoint is found nonconservative with respect to the Allowable Value, or the channel is found inoperable, then the function that channel provides must be declared inoperable and the LCO Condition entered for the particular protection function affected.

Because the required channels are specified on a per bus basis, the Condition may be enter ed separately for each bus as appropriate.

A Note has been added in the ACTIONS to clarify the application of Completion Time rules. The Conditions of this Specification may be entered independently for each Function listed in the LCO. The Completion Time(s) of the inoperable channel(s) of a Function will be tracked separately for each Function starting from the time the Condition was entered for that Function.

A.1

Condition A applies to the LOP DG start Function with one loss of voltage or degraded voltage channel per bus inoperable.

If one channel is inoperable, Required Action A.1 requires that channel to be placed in trip within 6 hours. With a channel in trip, the LOP DG start instrumentation channels

RAI 3.3.5-1

ACTIONS (continued)

are configured to provide a one-out-of-three logic to initiate a trip of the incoming offsite power.

~~A Note is added to allow bypassing an inoperable channel for up to 4 hours for surveillance testing of other channels. This allowance is made where bypassing the channel does not cause an actuation and where at least two other channels are monitoring that parameter.~~

RAI 3.3.5-2

The specified Completion Time ~~and time allowed for bypassing one channel are~~ reasonable considering the Function remains fully OPERABLE on every bus and the low probability of an event occurring during these intervals.

RAI 3.3.5-2

B.1

Condition B applies when more than one loss of voltage or more than one degraded voltage channel on a single bus is inoperable.

Required Action B.1 requires restoring all but one channel to OPERABLE status. The 1 hour Completion Time should allow ample time to repair most failures and takes into account the low probability of an event requiring an LOP start occurring during this interval.

C.1

Condition C applies ~~to each of the LOP DG start Functions~~ when the Required Action and associated Completion Time for Condition A or B are not met.

for 4.16 kV Functions or Condition B

In these circumstances the Conditions specified in LCO 3.8.1, "AC Sources – Operating," or LCO 3.8.2, "AC Sources – Shutdown," for the DG made inoperable by failure of the LOP DG start instrumentation are required to be entered immediately. The actions of those LCOs provide for adequate compensatory actions to assure unit safety.

standby emergency power source

Inserts D.1 and E.1 and E.2

SURVEILLANCE REQUIREMENTS

SR 3.3.5.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read

No Significant Hazards Considerations - NUREG-1431 Section 3.03.05

15-Mar-01

NSHC Number	NSHC Text
A Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The proposed change involves reformatting and rewording of the current Technical Specifications. The reformatting and rewording process involves no technical changes to existing requirements. As such, this change is administrative in nature and does not impact initiators of analyzed events or assumed mitigation of accident or transient events. Therefore, this change does not increase the probability or consequences of an accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not require a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. The proposed change will not impose any new or eliminate any old requirements. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? The proposed change will not significantly reduce the margin of safety because it has no impact on any safety analysis assumptions. This change is administrative. As such, there is no technical change to the requirements and, therefore, there is no reduction in the margin of safety.
L.01 Rev. E	Not used.

No Significant Hazards Considerations - NUREG-1431 Section 3.03.05

15-Mar-01

NSHC Number	NSHC Text
L.03 Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? This change does not result in any equipment or hardware changes. The allowable restoration time for inoperable safety-related 4.16 kV or 480 V undervoltage Functions is not the initiator for any analyzed event. The proposed change extends the allowable outage time by one hour. During this increased time, the consequences of an event are the same as the consequences of an event occurring during the currently allowed restoration time. Therefore, the proposed change does not significantly increase the probability or consequences of an accident previously evaluated during this time period. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not involve any physical alteration of plant systems, structures or components, nor does it alter parameters governing normal plant operation. The proposed change does not introduce a new mode of operation. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created. 3. Does this change involve a significant reduction in a margin of safety? Extending the allowable outage time of the safety-related 4.16 kV and 480 V undervoltage Functions by one hour is reasonable considering the low probability of an event LOP DG start during this interval. Accordingly, the proposed change does not involve a significant reduction in a margin of safety.

No Significant Hazards Considerations - NUREG-1431 Section 3.03.05

15-Mar-01

NSHC Number	NSHC Text
LA Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The proposed change relocates requirements from the Technical Specifications to the Bases, FSAR, or other plant controlled documents. The Bases and FSAR will be maintained using the provisions of 10 CFR 50.59. In addition to 10 CFR 50.59 provisions, the Technical Specifications Bases are subject to the change process in the Administrative Controls Chapter of the ITS. Plant procedures and other plant controlled documents are subject to controls imposed by plant administrative procedures, which endorse applicable regulations and standards. Changes to the Bases, FSAR, or other plant controlled documents will be evaluated in accordance with the requirements of the Bases Control Program in Chapter 5.0 of the ITS, 10 CFR 50.59, or plant administrative processes. Therefore, no increase in the probability or consequences of an accident previously evaluated will be allowed. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not require a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. The proposed change will not impose any different requirements and adequate control of the information will be maintained. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? The proposed change will not reduce a margin of safety because it has no impact on any safety analysis assumptions. In addition, the requirements to be moved from the Technical Specifications to the Bases, FSAR, or other plant controlled documents are as they currently exist. Future changes to the requirements in the Bases, FSAR, or other plant controlled documents will be evaluated in accordance with the requirements of 10 CFR 50.59, the Bases Control Program in Chapter 5.0 of the ITS, or the applicable plant process and no reduction in a margin of safety will be allowed.

No Significant Hazards Considerations - NUREG-1431 Section 3.03.05

15-Mar-01

NSHC Number	NSHC Text
M Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The proposed change provides more restrictive requirements for operation of the facility. These more stringent requirements do not result in operation that will increase the probability of initiating an analyzed event and do not alter the assumptions relative to the mitigation of an accident or transient event. These more restrictive requirements continue to ensure process variables, structures, systems and components are maintained consistent with the safety analyses. Therefore, this change does not increase the probability or consequences of an accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not require a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. The proposed change does impose different requirements. However, these changes are consistent with assumptions made in the safety analysis. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? The imposition of more restrictive requirements either has no affect on or increases the margin of safety. Each change is providing additional restrictions to enhance plant safety. These changes are consistent with the safety analysis. Therefore, this change does not involve a reduction in a margin of safety.

3.3 INSTRUMENTATION

3.3.4 Loss of Power (LOP) Diesel Generator (DG) Start and Load Sequence Instrumentation

LCO 3.3.4 The following LOP DG Start and Load Sequence Instrumentation shall be OPERABLE:

a. Three channels per bus of the 4.16 kV loss of voltage Function,

b. Three channels per bus of the 4.16 kV degraded voltage Function, and

c. Three channels per bus of the 480 V loss of voltage Function.

APPLICABILITY: MODES 1, 2, 3, and 4,
When associated DG is required to be OPERABLE by LCO 3.8.2, "AC Sources — Shutdown."

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one channel per bus inoperable.	A.1 Place channel in trip.	1 hour
B. Two or more 4.16 kV loss of voltage or 4.16 kV degraded voltage channels per bus inoperable.	B.1 Restore all but one channel to OPERABLE status.	1 hour

E
RAI 3.3.5-1
RAI 3.3.5-2

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A for 4.16 kV Functions or Condition B not met.	C.1 Enter applicable Condition(s) and Required Action(s) for the associated standby emergency power source made inoperable by LOP DG start instrumentation.	Immediately
D. Two or more 480 V loss of voltage channels per bus inoperable.	D.1 Restore all but one channel to OPERABLE status.	1 hour
E. Required Action and associated Completion Time of Condition A for 480 V loss of voltage Function or Condition D not met.	E.1 Be in MODE 3. AND E.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.4.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.4.2	Perform TADOT.	31 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.4.3	Perform CHANNEL CALIBRATION with Allowable Value as follows: a. 4.16 kV loss of voltage Allowable Value ≥ 3156 V with a time delay of ≥ 0.7 seconds and ≤ 1.0 second. b. 4.16 kV degraded voltage Allowable Value ≥ 3937 V with a time delay of < 6.47 seconds (with SI signal present) and < 54 seconds (without SI signal present.) c. 480 V loss of voltage Allowable Value 256 V ± 3% with a time delay of ≤ 0.5 seconds.	18 months

B 3.3 INSTRUMENTATION

B 3.3.4 Loss of Power (LOP) Diesel Generator (DG) Start and Load Sequence Instrumentation

BASES

BACKGROUND

The DGs provide a source of emergency power when offsite power is either unavailable or is insufficiently stable to allow safe unit operation. Undervoltage protection will generate an LOP start if a loss of voltage or degraded voltage condition occurs on the safeguards bus. There are two LOP start signals, one for each train.

Three undervoltage relays with inverse time characteristics are provided on each 4160 Class 1E instrument bus for detecting a sustained degraded voltage condition or a loss of bus voltage. The relays are combined in a two-out-of-three logic to generate an LOP signal if the voltage is below 75% for a short time or below 90% for a long time. The LOP start actuation is described in FSAR, Section 8.8 (Ref. 1).

During a loss of voltage to the safety-related 480 V buses, protective relays initiate load shedding and block automatic SI load sequencing until voltage returns to the buses. This function is necessary to prevent overloading the DGs.

Three undervoltage relays are provided on each safety-related 480 V bus for detecting a loss of voltage. The relays are arranged in a two-out-of-three logic to generate load sequencing signals for the associated 480 V bus.

Allowable Values

The Allowable Values used in the relays are based on the analytical limits presented in FSAR, Chapter 14 (Ref. 2). The selection of these Allowable Values is such that adequate protection is provided when all sensor and processing time delays are taken into account.

The actual nominal Trip Setpoint entered into the relays is normally still more conservative than that required by the Allowable Value. If the measured setpoint does not exceed the Allowable Value, the relay is considered OPERABLE.

Setpoints adjusted in accordance with the Allowable Value ensure that the consequences of accidents will be acceptable, providing the unit is operated from within the LCOs at the onset of the accident and that the equipment functions as designed. Allowable Values are specified for each Function in the LCO. Nominal Trip Setpoints are also specified in the unit specific setpoint calculations. The nominal setpoints are

BASES

BACKGROUND (continued)

selected to ensure that the setpoint measured by the surveillance procedure does not exceed the Allowable Value if the relay is performing as required. If the measured setpoint does not exceed the Allowable Value, the relay is considered OPERABLE. Operation with a Trip Setpoint less conservative than the nominal Trip Setpoint, but within the Allowable Value, is acceptable provided that operation and testing is consistent with the assumptions of the unit specific setpoint calculation. Each Allowable Value specified is more conservative than the analytical limit assumed in the transient and accident analyses in order to account for instrument uncertainties appropriate to the trip function.

APPLICABLE SAFETY ANALYSES

The LOP DG start and load sequence instrumentation is required for the Engineered Safety Features (ESF) Systems to function in any accident with a loss of offsite power. Its design basis is that of the ESF Actuation System (ESFAS).

Accident analyses credit the loading of the DG based on the loss of offsite power during a loss of coolant accident (LOCA). The actual DG start has historically been associated with the ESFAS actuation. The DG loading has been included in the delay time associated with each safety system component requiring DG supplied power following a loss of offsite power. The analyses assume a non-mechanistic DG loading, which does not explicitly account for each individual component of loss of power detection and subsequent actions.

The required channels of LOP DG start and load sequence instrumentation, in conjunction with the ESF systems powered from the DGs, provide unit protection in the event of any of the analyzed accidents discussed in Reference 2, in which a loss of offsite power is assumed.

The delay times assumed in the safety analysis for the ESF equipment include the 10 second DG start delay, and the appropriate sequencing delay, if applicable. The response times for ESFAS actuated equipment in LCO 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," include the appropriate DG loading and sequencing delay.

The LOP DG start and load sequence instrumentation channels satisfy Criterion 3 of the NRC Policy Statement.

BASES

LCO

The LCO for LOP DG start and load sequence instrumentation requires that three channels per bus of the 480 V loss of voltage Function and three channels per bus of the 4.16 kV loss of voltage and degraded voltage Functions shall be OPERABLE in MODES 1, 2, 3, and 4 when the LOP DG start and load sequence instrumentation supports safety systems associated with the ESFAS. In MODES 5 and 6, the three channels must be OPERABLE whenever the associated DG is required to be OPERABLE to ensure that the automatic start of the DG is available when needed. Loss of the LOP DG Start and Load Sequence Instrumentation Function could result in the delay of safety systems initiation when required. This could lead to unacceptable consequences during accidents. During the loss of offsite power the DG powers the motor driven auxiliary feedwater pumps. Failure of these pumps to start would leave only one turbine driven pump, as well as an increased potential for a loss of decay heat removal through the secondary system.

APPLICABILITY

The LOP DG Start and Load Sequence Instrumentation Functions are required in MODES 1, 2, 3, and 4 because ESF Functions are designed to provide protection in these MODES. Actuation in MODE 5 or 6 is required whenever the required DG must be OPERABLE so that it can perform its function on an LOP or degraded power to the vital bus.

ACTIONS

In the event a channel's Trip Setpoint is found nonconservative with respect to the Allowable Value, or the channel is found inoperable, then the function that channel provides must be declared inoperable and the LCO Condition entered for the particular protection function affected.

Because the required channels are specified on a per bus basis, the Condition may be entered separately for each bus as appropriate.

A Note has been added in the ACTIONS to clarify the application of Completion Time rules. The Conditions of this Specification may be entered independently for each Function listed in the LCO. The Completion Time(s) of the inoperable channel(s) of a Function will be tracked separately for each Function starting from the time the Condition was entered for that Function.

A.1

Condition A applies to the LOP DG start and load sequence Function with one loss of voltage or degraded voltage channel per bus inoperable.

BASES

ACTIONS (continued) If one channel is inoperable, Required Action A.1 requires that channel to be placed in trip within 1 hour. With a channel in trip, the LOP DG start and load sequence instrumentation channels are configured to provide a one-out-of-two logic to initiate a trip of the incoming offsite power.

E
RAI 3.3.5-1
RAI 3.3.5-2

The specified Completion Time is reasonable considering the Function remains fully OPERABLE on every bus and the low probability of an event occurring during these intervals.

B.1

Condition B applies when more than one 4.16 kV loss of voltage or more than one 4.16 kV degraded voltage channel on a single bus is inoperable.

Required Action B.1 requires restoring all but one channel to OPERABLE status. The 1 hour Completion Time should allow ample time to repair most failures and takes into account the low probability of an event requiring an LOP start occurring during this interval.

C.1

Condition C applies when the Required Action and associated Completion Time for Condition A for 4.16 kV Functions or Condition B are not met.

In these circumstances the Conditions specified in
LCO 3.8.1, "AC Sources-Operating," or
LCO 3.8.2, "AC Sources-Shutdown," for the standby emergency power source made inoperable by failure of the LOP DG start instrumentation are required to be entered immediately. The actions of those LCOs provide for adequate compensatory actions to assure unit safety.

D.1

Condition D applies when more than one 480 V loss of voltage channel on a single bus is inoperable.

Required Action D.1 requires restoring all but one channel to OPERABLE status. The 1 hour Completion Time should allow ample time to repair most failures and takes into account the low probability of an event requiring an LOP start and load sequence during this interval.

BASES

ACTIONS (continued) E.1 and E.2

If the Required Action and associated Completion Time of Condition A for the 480 V loss of voltage Function or Condition D are not met, the unit must be placed in a MODE in which the LCO does not apply. This is done by placing the unit in at least MODE 3 in 6 hours and in MODE 5 in 36 hours. The Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.3.4.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the two instrument channels could be an indication of excessive instrument drift in one of the channels or of something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying that the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the unit staff, based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the sensor or the signal processing equipment has drifted outside its limit.

The Frequency is based on operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the LCO required channels.

SR 3.3.4.2

SR 3.3.4.2 is the performance of a TADOT. This test is performed every 31 days. The test checks trip devices that provide actuation signals directly, bypassing the analog process control equipment. The Frequency is based on the known reliability of the relays and controls and the multichannel redundancy available, and has been shown to be acceptable through operating experience.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.4.3

SR 3.3.4.3 is the performance of a CHANNEL CALIBRATION.

The setpoints, as well as the response to a loss of voltage and a degraded voltage test, shall include a single point verification that the trip occurs within the required time delay, as shown in Reference 1.

A CHANNEL CALIBRATION is performed every 18 months, or approximately at every refueling. CHANNEL CALIBRATION is a complete check of the instrument loop, including the sensor. The test verifies that the channel responds to a measured parameter within the necessary range and accuracy.

The Frequency of 18 months is based on operating experience and consistency with the typical industry refueling cycle and is justified by the assumption of an 18 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

REFERENCES

1. FSAR, Section 8.8.
2. FSAR, Chapter 14.

Insert 3.3.7-1 (continued):

Table 3.3.5-1 (page 1 of 1)
CREFS Actuation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	FIELD SETTING(c)
1. Control Room Radiation				
a. Control Room Area Monitor	1, 2, 3, 4, (a), (b)	1	SR 3.3.5.1 SR 3.3.5.2 SR 3.3.5.3	≤ 5 mR/hr
b. Control Room Air Intake	1, 2, 3, 4, (a), (b)	1	SR 3.3.5.1 SR 3.3.5.2 SR 3.3.5.3	≤ 5E-5 µCi/cc
2. Containment Isolation	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 3, for all initiation functions and requirements.			

(a) During movement of irradiated fuel assemblies.

(b) During CORE ALTERATIONS.

(c) Nominal values.

E RAI 3.3.7-2

E RAI 3.3.7-2

Justification For Deviations - NUREG-1431 Section 3.03.07

15-Mar-01

JFD Number	JFD Text
01 Rev. A	NUREG 1431 LCO 3.3.7 has been altered to reflect the design and licensing basis for the Point Beach Control Room Emergency Filtration System (CREFS) automatic initiation instrumentation. As addressed in Justification for Deviation 1 of LCO 3.7.10, the Point Beach CREFS is not a completely redundant two train system. Similarly, the CREFS actuation instrumentation is not redundant. The Point Beach CREFS initiation instrumentation design consists of a single control room area monitor and a single ventilation intake noble gas monitor, either of which is capable of placing CREFS in its emergency make-up mode of operation (Mode 4). CREFS has four modes of operation, with portions of the system operating during normal unit operation to provide control room heating and cooling. The analyses for radiological consequences in the control room are based on operation of CREFS in the emergency make-up mode (Mode 4) as described in proposed ITS LCO 3.7.9. The only automatic instruments that place CREFS in emergency make-up mode are the containment isolation signal, the control room area radiation monitor and the control room ventilation system intake noble gas monitor. CREFS does not automatically restart after being load shed following a loss of offsite power; manual action is required to restart CREFS. CREFS Mode 4 operation (emergency make-up) is automatically initiated by a high radiation signal from the control room area monitor or noble gas intake monitor. Based on the above, the following changes have been proposed: Terminology has been changed in the Actions and Surveillance Requirement to reflect system design; Condition B has been omitted, based on each function (radiation monitor) consisting of a single channel; Condition E has been omitted, with the Conditions and Required Actions of Conditions C and D combined into one. A note has been added to the required actions of proposed Condition B that directs that the suspension of fuel motion actions are not applicable for the Containment Isolation Function being inoperable; and Complementary Bases changes have been made to Reflect the changes proposed in the Technical Specifications, and where necessary to fully describe the design and licensing basis for the system.

ITS:	NUREG:
B 3.03.05	B 3.03.07
LCO 3.03.05 COND A	LCO 3.03.07 COND A
LCO 3.03.05 COND A RA A.1	LCO 3.03.07 COND A RA A.1
LCO 3.03.05 COND B	LCO 3.03.07 COND C LCO 3.03.07 COND D

Justification For Deviations - NUREG-1431 Section 3.03.07

15-Mar-01

JFD Number	JFD Text	
	LCO 3.03.05 COND B NOTE	N/A
	LCO 3.03.05 COND B RA B.1	LCO 3.03.07 COND D RA D.1
	LCO 3.03.05 COND B RA B.2	LCO 3.03.07 COND D RA D.2
	LCO 3.03.05 COND B RA B.3	LCO 3.03.07 COND C RA C.1
	LCO 3.03.05 COND B RA B.4	LCO 3.03.07 COND C RA C.2
	LCO 3.03.05 T3.03.05-01	LCO 3.03.07 T3.03.07-01
	LCO 3.03.05 T3.03.05-01 01A	LCO 3.03.07 T3.03.07-01 03A
	LCO 3.03.05 T3.03.05-01 01B	LCO 3.03.07 T3.03.07-01 03B
	LCO 3.03.05 T3.03.05-01 02	LCO 3.03.07 T3.03.07-01 04
	N/A	LCO 3.03.07 COND B
		LCO 3.03.07 COND B RA B.1.1
		LCO 3.03.07 COND B RA B.1.1 NOTE
		LCO 3.03.07 COND B RA B.1.2
		LCO 3.03.07 COND B RA B.2

02
Rev. A

The Point Beach Control Room Ventilation System design does not have a toxic gas isolation mode and no credit is taken for CREFS function in controlling control room doses from a decay tank rupture. As such, the bracketed LCO Applicability of Modes 5 and 6, Required Actions, and Bases statements related to the chemical and toxic gas protection, and decay tank rupture and associated modes of control room ventilation system operation as related to these features, have been omitted.

The need for hazardous chemical and toxic gas protections was reviewed and determined to not be necessary as part of the Point Beach NUREG 0737 review. This conclusion is based on the fact that are no appreciable amounts of chlorine stored on site, and the amount and location of hazardous chemicals both on site and within 5 miles of the site do not present a significant risk to control room habitability.

The activity released from a decay tank rupture consists primarily of noble gases released from processing of reactor coolant. CREFS does not provide significant protection from noble gas releases.

ITS:	NUREG:
B 3.03.05	B 3.03.07
N/A	LCO 3.03.07 COND A RA A.1
	LCO 3.03.07 COND A RA A.1 NOTE
	LCO 3.03.07 COND E
	LCO 3.03.07 COND E RA E.1

Justification For Deviations - NUREG-1431 Section 3.03.07

15-Mar-01

JFD Number	JFD Text

03
Rev. A

The brackets have been removed and the proper plant specific information has been provided.

ITS:	NUREG:
B 3.03.05	B 3.03.07
LCO 3.03.05 T3.03.05-01 01A	LCO 3.03.07 T3.03.07-01 03A
LCO 3.03.05 T3.03.05-01 01B	LCO 3.03.07 T3.03.07-01 03B

04
Rev. A

Manual emergency mode start capability for the control room ventilation system has been moved from NUREG 1431 LCO 3.3.7 to proposed ITS SR 3.7.9.5. This change is necessary to reflect the Point Beach control room ventilation system design. There is no single control switch which places the control room ventilation system into its emergency make-up operating configuration as NUREG 1431 LCO 3.3.7 addresses, but rather a number of switches must be manipulated to place the system into emergency make-up.

Manual actuation capability is a requirement for system operability. As addressed in Justification for Deviation 1 of NUREG 1431 LCO 3.7.10, the control room ventilation system does not automatically restart after being load shed following a loss of offsite power. Manual action is required to restart the control room ventilation system after a loss of offsite power. Incorporating this surveillance under proposed ITS LCO 3.7.9 recognizes the need to maintain and test manual actuation capability, while directing the appropriate Required Actions if this capability is lost. Subsequent Surveillance Requirements have been re-numbered to maintain sequential order.

ITS:	NUREG:
B 3.03.05	B 3.03.07
N/A	LCO 3.03.07 T3.03.07-01 01
	LCO 3.03.07 T3.03.07-01 01
	SR 3.03.07.06
	SR 3.03.07.06 NOTE

Justification For Deviations - NUREG-1431 Section 3.03.07

15-Mar-01

JFD Number	JFD Text

05
Rev. A

NUREG 1431 LCO 3.3.7 describes features and required tests for CREFS actuation instrumentation which contains a logic circuit. The Point Beach CREFS actuation instrumentation consists of two radiation monitors, one area radiation monitor and one noble gas monitor. Either of these monitors in alarm, will actuate the CREFS in its emergency make-up mode of operation (Mode 4). No actuation logic exists, as each monitor directly actuates the system. There are no master or slave relays in the circuit. Surveillance for the Master and Slave relays associated with the Containment Isolation actuation function is performed in accordance with the requirements for that function.

As such, line item 2 of Table 3.7.10-1 and its associated Surveillance Requirements have been omitted and the Bases has been modified as required to reflect the Point Beach design. Subsequent Surveillance Requirements have been re-numbered to maintain sequential order.

ITS:	NUREG:
B 3.03.05	B 3.03.07
LCO 3.03.05 T3.03.05-01	LCO 3.03.07 T3.03.07-01
N/A	LCO 3.03.07 T3.03.07-01 02
	LCO 3.03.07 T3.03.07-01 02
	SR 3.03.07.03
	SR 3.03.07.04
	SR 3.03.07.05
SR 3.03.05.03	SR 3.03.07.07

06
Rev. A

As discussed in Justification for Deviation 1 of LCO 3.7.10, operation of CREFS in the emergency make-up mode of operations (Mode 4) is the only mode of operation which is addressed within the proposed ITS. NUREG 1431 LCO 3.3.7 is written to address a CREFS which is automatically initiated on a Safety Injection signal. The only parameters which will place the Point Beach CREFS in the emergency make-up mode of operation (Mode 4) are Containment Isolation, control room area radiation and control room ventilation intake noble gas. As such, reference to and discussion of automatic signals other than Containment Isolation and these two radiation monitors has been omitted from the proposed ITS.

ITS:	NUREG:
B 3.03.05	B 3.03.07
LCO 3.03.05 T3.03.05-01 02	LCO 3.03.07 T3.03.07-01 04
N/A	LCO 3.03.07 T3.03.07-01 04

Justification For Deviations - NUREG-1431 Section 3.03.07

15-Mar-01

JFD Number	JFD Text	
07 Rev. A	The Bases for NUREG 1431 LCO 3.3.7 has been modified to reflect the CREFS actuation instrumentation design. As addressed in Justification for Deviation 1 of this LCO, the Point Beach CREFS actuation instrumentation consists of a Containment Isolation signal, a single control room area monitor and a single intake noble gas monitor.	
	ITS:	**NUREG:**
	B 3.03.05	B 3.03.07
08 Rev. A	Based on having only a single channel per function (radiation monitor), the Bases for NUREG 1431 SR 3.3.7.1, Channel Check, has been rewritten to clarify method of performance. As provided in the Definition of Channel Check, a Channel Check can be a qualitative assessment by observation of channel behavior. Where possible, a Channel Check should include a comparison of channel indication and status to other status derived from independent instrument channels. In the Case of these monitors, no independent instrument channel exist; therefore, the Channel Check will consist of a qualitative assessment of expected behavior based on plant and control room conditions.	
	ITS:	**NUREG:**
	B 3.03.05	B 3.03.07
09 Rev. A	The units associated with the trip setpoint for the control room intake noble gas monitor has been changed from mR/hr to micro-Ci/cc. The units of measure specified are appropriate for the Point Beach noble gas monitors.	
	ITS:	**NUREG:**
	B 3.03.05	B 3.03.07
	LCO 3.03.05 T3.03.05-01 01B	LCO 3.03.07 T3.03.07-01 03B
10 Rev. A	Any or all of the actuation functions are allowed to be inoperable for 7 days, which is consistent with the allowed outage time of the control room ventilation system. Therefore, the basis information pertaining to channel inoperability has been appropriately modified to account for the inoperability of entire functions, rather than channels.	
	ITS:	**NUREG:**
	B 3.03.05	B 3.03.07

Justification For Deviations - NUREG-1431 Section 3.03.07

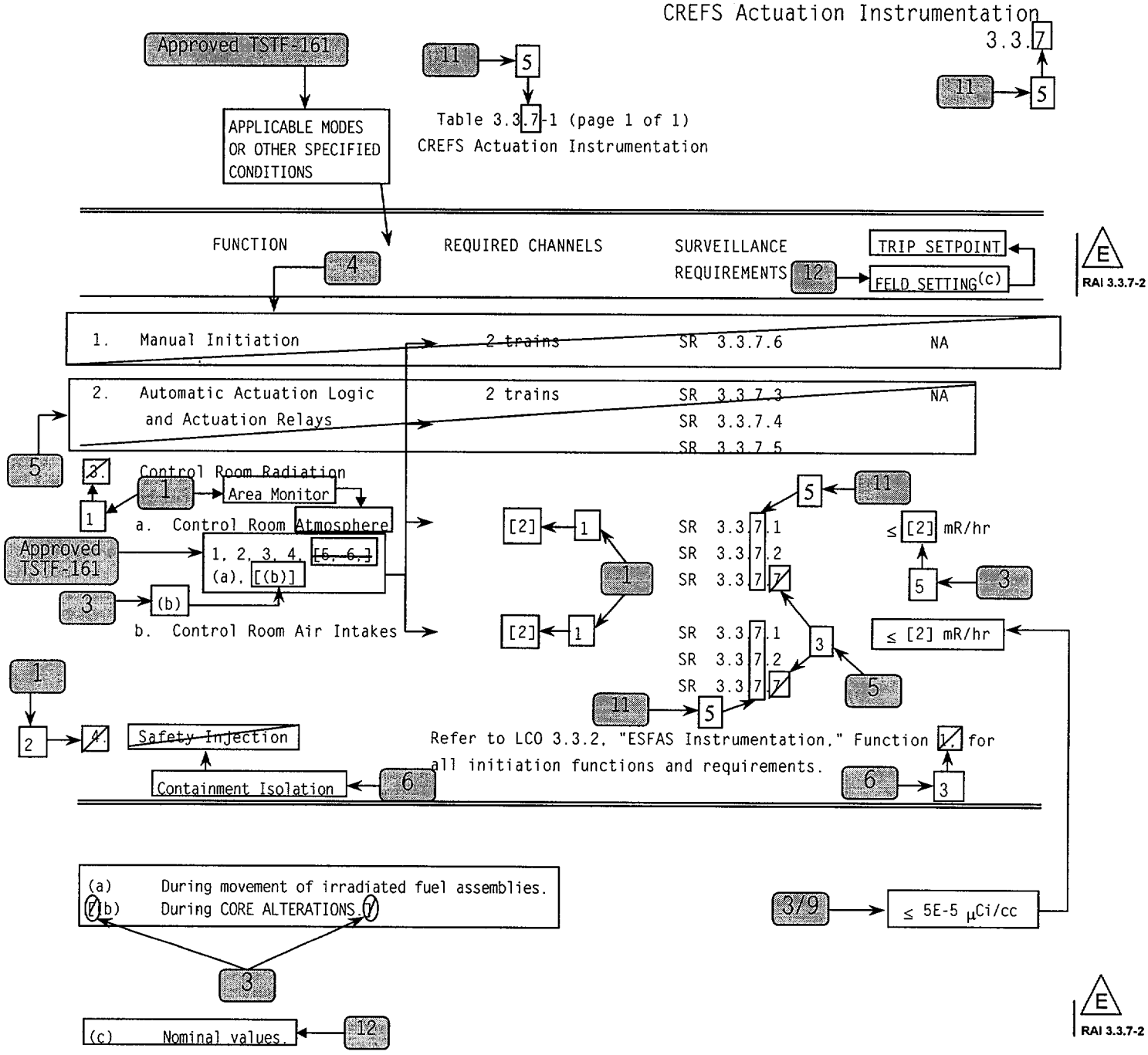
15-Mar-01

JFD Number	JFD Text
11 Rev. A	NUREG 1431 LCO 3.3.4, Remote Shutdown System, has not been adopted as part of Point Beach's conversion to the Improved Technical Specifications. The Point Beach CTS does not contain any Specifications which would require operability of instrumentation or controls associated with the capability to remotely shutdown the units. By not adopting this specification, subsequent LCOs are renumbered.

ITS:	NUREG:
B 3.03.05	B 3.03.07
LCO 3.03.05	LCO 3.03.07
LCO 3.03.05 T3.03.05-01	LCO 3.03.07 T3.03.07-01
SR 3.03.05.01	SR 3.03.07.01
SR 3.03.05.02	SR 3.03.07.02
SR 3.03.05.03	SR 3.03.07.07

12 Rev. E	The Trip Setpoints associated with the Control Room Area Monitor and Control Room Air Intakes functions have been replaced with field settings. These field settings were developed outside of the setpoint methodology. No analytical limits have been established for these functions as they are not credited in the safety analysis for the mitigation of any accident. Therefore, the field settings for these functions being provided in ITS Table 3.3.5-1 do not imply that an analytical limits exist, or that these functions are necessary to mitigate an analyzed accident.

ITS:	NUREG:
LCO 3.03.05 T3.03.05-01	LCO 3.03.07 T3.03.07-01
LCO 3.03.05 T3.03.05-01 NOTE (c)	N/A


Approved TSTF-161
APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS
Table 3.3.7-1 (page 1 of 1)
CREFS Actuation Instrumentation
FUNCTION
REQUIRED CHANNELS
SURVEILLANCE REQUIREMENTS
TRIP SETPOINT
FELD SETTING(c)
RAI 3.3.7-2
1. Manual Initiation
2 trains
SR 3.3.7.6
NA
2. Automatic Actuation Logic and Actuation Relays
2 trains
SR 3.3.7.3
SR 3.3.7.4
SR 3.3.7.5
NA
Control Room Radiation
Area Monitor
a. Control Room Atmosphere
1, 2, 3, 4, [5, 6,]
(a), [(b)]
b. Control Room Air Intakes
(b)
Approved TSTF-161
[2]
SR 3.3.7.1
SR 3.3.7.2
SR 3.3.7.7
≤ [2] mR/hr
≤ [2] mR/hr
Safety Injection
Containment Isolation
Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 1. for all initiation functions and requirements.
(a) During movement of irradiated fuel assemblies.
(b) During CORE ALTERATIONS.
3/9
≤ 5E-5 μCi/cc
(c) Nominal values.
RAI 3.3.7-2

BASES

LCO (continued)

1
5 →

affected, the Conditions applicable to their SI function need not be entered. The less restrictive Actions specified for inoperability of the CREFS Functions specify sufficient compensatory measures for this case.

6 → 1. → 3. Control Room Radiation

7/12
Replace with Insert B 3.3.5-3 →

The LCO specifies two required Control Room Atmosphere Radiation Monitors and two required Control Room Air Intake Radiation Monitors to ensure that the radiation monitoring instrumentation necessary to initiate the CREFS remains OPERABLE.

For sampling systems, channel OPERABILITY involves more than OPERABILITY of channel electronics. OPERABILITY may also require correct valve lineups, sample pump operation, and filter motor operation, as well as detector OPERABILITY, if these supporting features are necessary for trip to occur under the conditions assumed by the safety analyses.

E
RAI 3.3.7-2

2. → 4. Safety Injection

3, → 1. for all initiating Functions and requirements.

Containment Isolation → Refer to LCO 3.3.2, Function

3

APPLICABILITY

The CREFS Functions must be OPERABLE in MODES 1, 2, 3, 4, and during CORE ALTERATIONS and movement of irradiated fuel assemblies. The Functions must also be OPERABLE in MODES [5 and 6] when required for a waste gas decay tank rupture accident, to ensure a habitable environment for the control room operators.

Approved TSTF-161
2 →
Insert B 3.3.5-7. →

ACTIONS

10 →

The most common cause of channel inoperability is outright failure or drift of the bistable or process module sufficient to exceed the tolerance allowed by the unit specific calibration procedures. Typically, the drift is found to be small and results in a delay of actuation rather than a total loss of function. This determination is

LCO 3.3.5 BASES INSERTS

Insert B 3.3.5-3:

The LCO requires the control room area (RE-101) and the control room air intake noble gas monitor (RE-235) to be OPERABLE, to ensure that the instrumentation necessary to initiate the CREFS emergency make-up mode (Mode 4) is OPERABLE.

The field settings for the Control Room Area Monitor and Control Room Air Intakes were developed outside of the setpoint methodology. No analytical values are assumed in the accident analysis for these functions.

E
RAI 3.3.7-2

Insert B 3.3.5-4:

Condition A applies to the containment isolation signal, the control room area radiation monitor (RE-101) and the control room intake noble gas monitor (RE-235).

If a Function is inoperable, 7 days is permitted to restore the Function to OPERABLE status from the time the Condition was entered for that Function. The 7 day Completion Time is the same as for inoperable CREFS. The basis for this Completion Time is the same as provided in LCO 3.7.9. If the monitor cannot be restored to OPERABLE status, CREFS must be placed in the emergency make-up mode of operation (Mode 4). Placing CREFS in the emergency make-up mode of operation accomplishes the actuation instrumentation's safety function.

Table 3.3.5-1 (page 1 of 1)
CREFS Actuation Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	FIELD SETTING(c)
1.	Control Room Radiation				
	a. Control Room Area Monitor	1, 2, 3, 4, (a), (b)	1	SR 3.3.5.1 SR 3.3.5.2 SR 3.3.5.3	≤ 5 mR/hr
	b. Control Room Air Intake	1, 2, 3, 4, (a), (b)	1	SR 3.3.5.1 SR 3.3.5.2 SR 3.3.5.3	≤ 5E-5 μCi/cc
2.	Containment Isolation	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 3, for all initiation functions and requirements.			

E
RAI 3.3.7-2

(a) During movement of irradiated fuel assemblies.

(b) During CORE ALTERATIONS.

(c) Nominal values.

E
RAI 3.3.7-2

B 3.3 INSTRUMENTATION

B 3.3.5 Control Room Emergency Filtration System (CREFS) Actuation Instrumentation

BASES

BACKGROUND

The CREFS provides an enclosed control room environment from which the unit can be operated following an uncontrolled release of radioactivity. The control room ventilation system normally operates in the normal operating mode (Mode 1). Upon receipt of an actuation signal, the CREFS initiates the emergency make-up (Mode 4) mode of operation. The control room ventilation system and its operating modes are described in the Bases for LCO 3.7.9, "Control Room Emergency Filtration System."

The actuation instrumentation consists of containment isolation, noble gas radiation monitor in the air intake and control room area radiation monitor. A containment isolation signal or high radiation signal from either of these detectors will initiate the emergency make-up mode of operation (Mode 4) of the CREFS.

APPLICABLE SAFETY ANALYSES

The CREFS provides airborne radiological protection for control room personnel, as demonstrated by the limiting control room dose analyses for the design basis large break loss of coolant accident. Control room dose analysis assumptions are presented in the FSAR, Section 14.3.5 (Ref. 1).

In MODES 1, 2, 3, and 4, a containment isolation signal or the CREFS radiation monitor actuation signal will provide automatic initiation of CREFS in the emergency make-up mode of operation (Mode 4) during design basis events which result in significant radiological releases to the environs (e.g. large break loss of coolant accident, steam generator tube rupture, reactor coolant pump locked rotor, etc;).

The CREFS radiation monitor actuation signal also provides automatic initiation of CREFS, in the emergency make-up mode of operation (Mode 4), to assure control room habitability in the event of a fuel handling during movement of
irradiated fuel, and CORE ALTERATIONS.

Further Applicable Safety Analysis information for CREFS is contained in the Bases for LCO 3.7.9, "Control Room Emergency Filtration System."

The CREFS actuation instrumentation satisfies Criterion 3 of the NRC Policy Statement.

BASES

LCO

The LCO requirements ensure that instrumentation necessary to initiate the CREFS is OPERABLE.

1. Control Room Radiation

   The LCO requires the control room area (RE-101) and the control room air intake noble gas monitor (RE-235) to be OPERABLE, to ensure that the instrumentation necessary to initiate the CREFS emergency make-up mode (Mode 4) is OPERABLE.

   The field settings for the Control Room Area Monitor and Control Room Air Intakes were developed outside of the setpoint methodology. No analytical values are assumed in the accident analysis for these functions.

   E
   RAI 3.3.7-2

2. Containment Isolation

   Refer to LCO 3.3.2, Function 3, for all initiating Functions and requirements.

APPLICABILITY

The CREFS Functions must be OPERABLE in MODES 1, 2, 3, 4, and during CORE ALTERATIONS and movement of irradiated fuel assemblies.

The Applicability for the CREFS actuation on the ESFAS Safety Injection Functions are specified in LCO 3.3.2. Refer to the Bases for LCO 3.3.2 for discussion of the Safety Injection Function Applicability.

ACTIONS

A Note has been added to the ACTIONS indicating that separate Condition entry is allowed for each Function. The Conditions of this Specification may be entered independently for each Function listed in Table 3.3.5-1 in the accompanying LCO. The Completion Time(s) of the inoperable Function will be tracked separately for each Function starting from the time the Condition was entered for that Function.

A.1

Condition A applies to the containment isolation signal, control room area radiation monitor (RE-101) and the control room intake noble gas monitor (RE-235).

If a Function is inoperable, 7 days is permitted to restore the Function to OPERABLE status from the time the Condition was entered for that Function. The 7 day Completion Time is the same as for inoperable CREFS. The basis for this Completion Time is the same as provided in

BASES

ACTIONS (continued) LCO 3.7.9. If the Function cannot be restored to OPERABLE status, CREFS must be placed in the emergency make-up mode of operation (MODE 4). Placing CREFS in the emergency make-up mode of operation accomplishes the actuation instrumentation's safety function.

B.1, B.2, B.3, and B.4

Condition B applies when the Required Action and associated Completion Time for Condition A have not been met. If Movement of irradiated fuel assemblies or CORE ALTERATIONS are in progress, these activities must be suspended immediately to reduce the risk of accidents that would require CREFS actuation. In addition, if any unit is in MODE 1, 2, 3, or 4, the unit must be brought to a MODE in which the LCO requirements are not applicable. To achieve this status, the unit must be brought to MODE 3 within 6 hours and MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

The Required Actions for Condition B are modified by a Note that states that Required Actions B.1 and B.2 are not applicable for inoperability of the Containment Isolation actuation function. This note is necessary because the Applicability for the Containment Isolation actuation function is Modes 1, 2, 3, and 4. The Containment Isolation actuation function is not used for mitigation of accidents involving the movement of irradiated fuel assemblies.

SURVEILLANCE REQUIREMENTS A Note has been added to the SR Table to clarify that Table 3.3.5-1 determines which SRs apply to which CREFS Actuation Functions.

SR 3.3.5.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. However, in the case of the control room area and control room intake noble gas monitors, no independent instrument channel exist, therefore, the CHANNEL CHECK for these monitors will consist of a qualitative assessment of expected channel behavior, based on current plant and control room conditions. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

BASES

SURVEILLANCE REQUIREMENTS (continued)

The Frequency is based on operating experience that demonstrates channel failure is rare.

SR 3.3.5.2

A COT is performed once every 92 days on each required channel to ensure the entire channel will perform the intended function. This test verifies the capability of the instrumentation to provide the CREFS actuation. The setpoints shall be left consistent with the unit specific calibration procedure tolerance. The Frequency is based on the known reliability of the monitoring equipment and has been shown to be acceptable through operating experience.

SR 3.3.5.3

A CHANNEL CALIBRATION is performed every 18 months, or approximately at every refueling. CHANNEL CALIBRATION is a complete check of the instrument loop, including the sensor. The test verifies that the channel responds to a measured parameter within the necessary range and accuracy.

The Frequency is based on operating experience and is consistent with the typical industry refueling cycle.

REFERENCES

FSAR. Section 14.3.5.

Justification For Deviations - NUREG-1431 Section 1.0

15-Mar-01

JFD Number	JFD Text
05 Rev. A	The definition of TADOT has been altered to remove reference to setpoint verifications and adjustments. The definition of TADOT is only used in conjunction with functions that do not have a setpoint (e.g. manual trip, reactor trip breaker indication, interlock functions). As such, in lieu of taking exception to setpoint verification in all SR applications, a change to the Bases is more appropriate.

ITS:	NUREG:
1.01.24 TADOT	1.01.26 TADOT

JFD Number	JFD Text
06 Rev. D	Not used.

ITS:	NUREG:
N/A	N/A

JFD Number	JFD Text
07 Rev. D	These are editorial changes to the use and applications sections of the NUREG.

ITS:	NUREG:
1.04	1.04

JFD Number	JFD Text
08 Rev. E	The CTS definition of shutdown margin does not require accounting for a stuck rod in the determination of shutdown margin, when the control rods are not withdrawn, while NUREG 1431 would require the highest worth rod to be accounted for regardless of control rod status. It is not necessary and overly conservative to account for failure of a control rod to insert (single failure), when all rods are inserted. Therefore, the CTS requirement to account for a stuck control rod only when rods are withdrawn, has been retained in the proposed ITS. This is consistent with TSTF 248.

ITS:	NUREG:
1.01.20 SDM	1.01.22 SDM

JFD Number	JFD Text
09 Rev. D	NUREG 1431 defines the allowable leakage from containment La in terms of Pa, where Pa is the calculated peak containment pressure. CTS defines Pa and the peak design containment pressure. The NUREG 1431 definition is being revised to be consistent with the CTS definition. The current licensing basis for PBNP is based on a definition of Pa that differs from 10 CFR 50 Appendix J. Appendix J defines Pa as the calculated peak containment internal pressure. The PBNP current licensing basis defines Pa as the containment design pressure. Therefore, Pa is conservatively established at 60 psig for PBNP, which is about 7 psig greater than the approximately 53 psig peak pressure shown in the PBNP FSAR in Section 14.3.4. To reflect the PBNP licensing basis, the ITS Bases needs to state "design" pressure vice "calculated" pressure.

ITS:	NUREG:
1.01.11 La	1.01.12 La

RAI 1.0-2

1.1 Definitions

However, with all RCCAs verified fully inserted by two independent means, it is not necessary to account for a stuck RCCA in the SDM calculation;

8

SHUTDOWN MARGIN (SDM)
(continued)

a. All rod cluster control assemblies (RCCAs) are fully inserted except for the single RCCA of highest reactivity worth, which is assumed to be fully withdrawn. With any RCCA not capable of being fully inserted, the reactivity worth of the RCCA must be accounted for in the determination of SDM; and

b. In MODES 1 and 2, the fuel and moderator temperatures are changed to the nominal zero power design level(1).

c.

1

The SLAVE RELAY TEST may be performed by means of any series of sequential, overlapping, or total steps.

all slave relays in the channel required for OPERABILITY

required

SLAVE RELAY TEST

A SLAVE RELAY TEST shall consist of energizing ~~each slave relay~~ and verifying the OPERABILITY of each slave relay. The SLAVE RELAY TEST shall include, ~~as a minimum,~~ a continuity check of associated testable actuation devices.

Approved TSTF-205, R.3

STAGGERED TEST BASIS

A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during n Surveillance Frequency intervals, where n is the total number of systems, subsystems, channels, or other designated components in the associated function.

all devices in the channel required for trip actuating device OPERABILITY.

The TADOT may be performed by means of any series of sequential, overlapping, or total steps.

THERMAL POWER

THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

5

TRIP ACTUATING DEVICE OPERATIONAL TEST (TADOT)

A TADOT shall consist of operating the trip actuating device and verifying the OPERABILITY of ~~required alarm, interlock, display, and trip functions.~~ ~~The TADOT shall include adjustment, as necessary, of the trip actuating device so that it actuates at the required setpoint within the required accuracy.~~

1.1 Definitions (continued)

	the average of the lower excore detector calibrated outputs, whichever is greater.
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 1518.5 MWt.
SHUTDOWN MARGIN (SDM)	SDM shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming: a. All rod cluster control assemblies (RCCAs) are fully inserted except for the single RCCA of highest reactivity worth, which is assumed to be fully withdrawn. However, with all RCCAs verified fully inserted by two independent means, it is not necessary to account for a stuck RCCA in the SDM calculation;  RAI 1.0-2 b. With any RCCA not capable of being fully inserted, the reactivity worth of the RCCA must be accounted for in the determination of SDM; and c. In MODES 1 and 2, the fuel and moderator temperatures are changed to the nominal zero power design level.
SLAVE RELAY TEST	A SLAVE RELAY TEST shall consist of energizing all slave relays in the channel required for OPERABILITY and verifying the OPERABILITY of each required slave relay. The SLAVE RELAY TEST shall include a continuity check of associated required testable actuation devices. The SLAVE RELAY TEST may be performed by means of any series of sequential, overlapping, or total channel steps.
STAGGERED TEST BASIS	A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during n Surveillance Frequency intervals, where n is the total number of systems, subsystems, channels, or other designated components in the associated function.
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

Description of Changes - NUREG-1431 Section 3.04.13

15-Mar-01

DOC Number	DOC Text

A.01
Rev. A

In the conversion of Point Beach current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted which do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the Standard Technical Specifications, Westinghouse Plants, NUREG-1431, Revision 1 (i.e., Improved Standard Technical Specifications (ISTS)).

CTS:	ITS:
15.03.01.D.01	LCO 3.04.13 COND A
15.03.01.D.02	LCO 3.04.13 C
15.03.01.D.04	LCO 3.04.13 COND B
	LCO 3.04.13 D
15.03.01.D.05	LCO 3.04.13 A
	LCO 3.04.13 COND B

A.02
Rev. E

CTS 15.3.1.D.1 specifies that a follow-up evaluation of the safety implications shall be initiated as soon as practicable, but no later than within 4 hours, if leakage of reactor coolant from the RCS is indicated to exceed 1 gpm. CTS 15.3.1.D.2 requires a reactor shutdown be initiated as soon as practical, but no later than 24 hours after the leak was detected. Proposed ITS LCO 3.4.13, Condition A, requires RCS leakage that is not within the limits (other than pressure boundary leakage), be reduced to within the limits within 4 hours. This allows time to verify leakage rates and either identify unidentified leakage or reduce leakage to within the limits before the reactor must be shutdown. This is consistent with the STS.

CTS:	ITS:
15.03.01.D.01	LCO 3.04.13 COND A

A.03
Rev. A

CTS 15.3.1.D is revised to adopt NUREG-1431 SR 3.4.13.2, which requires verification of the SG Tube Surveillance Program. This surveillance requirement emphasizes the importance of SG Tube integrity. This change is administrative, because the SG Tube Surveillance Program already exists in CTS 15.4.2.A, and proposed SR 3.4.13.2 does not impose any new requirements.

CTS:	ITS:
15.04.02.A	SR 3.04.13.02

A.04
Rev. A

CTS 15.3.1.D.6 requires that the reactor not be restarted until the leak is repaired or until the problem is otherwise corrected. Proposed LCO 3.0.4 states when an LCO is not met, entry into a MODE in the Applicability shall not be made except when the associated ACTIONS to be entered permit continued operation in the MODE in the Applicability for an unlimited period of time. Proposed LCO 3.4.13 has Applicability in MODES 1, 2, 3 and 4, and the ACTIONS of LCO 3.4.13 do not permit continued operation in any of these MODES for an unlimited period of time. Therefore, the statement of CTS 15.3.1.D.6 is not required, and is not retained in ITS.

CTS:	ITS:
15.03.01.D.06	N/A

Description of Changes - NUREG-1431 Section 3.04.13

15-Mar-01

DOC Number	DOC Text	
A.05 Rev. B	The Bases of the current Technical Specifications for this section have been completely replaced by revised Bases that reflect the format and applicable content of PBNP ITS Chapter 3.4, consistent with the Standard Technical Specifications for Westinghouse Plants, NUREG-1431. The revised Bases are as shown in the PBNP ITS Bases.	
	CTS:	**ITS:**
	BASES	B 3.04.13
L.01 Rev. A	CTS 15.3.1.D.4 requires the reactor be shutdown and the plant be placed in cold shutdown within 30 hours of detection of exceeding primary to secondary leakage limits. Proposed ITS LCO 3.4.13, Conditions A and B require that the leakage be returned to within limits in 4 hours, or be in MODE 3 in 6 hours and in MODE 5 in 36 hours. This is a relaxation of requirements and is less restrictive, but is acceptable. The proposed time requirement has been shown to be a reasonable time, based on industry experience, to reach MODE 5 from full power conditions in an orderly manner without challenging plant systems. Additional consideration has shown that there is a low probability of further degradation of the RCPB in the additional time interval.	
	CTS:	**ITS:**
	15.03.01.D.04	LCO 3.04.13 COND B RA B.1 LCO 3.04.13 COND B RA B.2
L.02 Rev. A	CTS 15.4.1, Table 15.4.1-2, Item 16, Primary System Leakage Evaluation, is modified by Note (6), which states the surveillance is not required during periods of refueling shutdown. Per ITS SR 3.0.1, surveillance requirements shall be met during the MODES in the Applicability for individual LCOs. Therefore, SR 3.4.13.1 is required to be met during MODES 1, 2, 3 and 4. Deleting this note and adopting the applicability of ITS LCO 3.4.13 is less restrictive, but is acceptable because these are the conditions where the RCS is pressurized. In MODES 5 and 6, leakage limits are not required because the reactor coolant pressure is far lower, resulting in lower stresses and reduced potentials for leakage. Furthermore, adopting the Applicability of ITS LCO 3.4.13, establishes consistency with the requirements of CTS 15.3.1.D.	
	CTS:	**ITS:**
	15.04.01 T 15.04.01-02 16 (6)	LCO 3.04.13
L.03 Rev. A	CTS 15.4.1, Table 15.4.1-2, Item 16, Primary System Leakage Evaluation, is revised to adopt a Note which states, the performance of the surveillance requirement is not required in MODES 3 or 4 until 12 hours of steady state operation. This change is less restrictive, but is acceptable because steady state operation is required to perform a proper RCS water inventory balance. These calculations include data dependent on RCS pressure, temperature, power level, pressurizer and makeup tank levels, makeup and letdown, and RCP seal injection and return flows. Changes occurring in these parameters during maneuvering invalidate the data, making the calculations useless. Therefore, this surveillance is not required to be performed in MODES 3 or 4 until 12 hours of steady state operation near operating pressure have been established.	
	CTS:	**ITS:**
	NEW	SR 3.04.13.01 NOTE

Description of Changes - NUREG-1431 Section 3.04.13

15-Mar-01

DOC Number	DOC Text
L.04 Rev. B	CTS 15.3.1.D.1 and 15.3.1.D.3 require a follow-up evaluation of the safety implications of the RCS leakage and provide information to be considered and contained in the evaluation concerning plant shutdown and exposure to offsite personnel. The requirement to perform an evaluation and the details of the information to be included are not being retained in the ITS, because they are not required to provide adequate protection of the public health and safety. The purpose of ITS LCO 3.4.13 is to limit system operation in the presence of LEAKAGE from these sources to amounts that do not compromise safety. ITS LCO 3.4.13 provides leakage limits for pressure boundary leakage, identified leakage, unidentified leakage, and primary to secondary leakage through a SG. Separating the identified LEAKAGE from the unidentified LEAKAGE is necessary to provide quantitative information to the operators, allowing them to take corrective action should a leak occur that is detrimental to the safety of the facility and the public. Therefore, specifying a requirement to perform an evaluation is unnecessary. **CTS:** 15.03.01.D.01, 15.03.01.D.03 **ITS:** N/A
LA.01 Rev. B	CTS 15.3.1.D.1 provides means by which leakage of reactor coolant from the RCS can be indicated. These details are being deleted from Technical Specifications, and are moved to the Bases. This information provides details which are not directly pertinent to the actual requirement, and are not required to be in the ITS to provide adequate protection to the public health and safety. Changes to these details will be controlled in accordance with the provisions of the Bases Control Program described in Chapter 5 of the Improved Technical Specifications and the 50.59 process as applicable. **CTS:** 15.03.01.D.01 **ITS:** N/A
LA.02 Rev. A	CTS 15.3.1.D.1 states any identified leakage shall be considered to be real leakage until it is determined that either (1) a safety problem does not exist or (2) that the indicated leak cannot be substantiated by direct observation or other indication. These details are being deleted from Technical Specifications and are moved to licensee control. These details are not required to be in the ITS to provide adequate protection to the public health and safety. Changes to plant procedures and other plant controlled documents are subject to controls imposed by plant administrative procedures, which endorse applicable regulations and standards. **CTS:** 15.03.01.D.01 **ITS:** N/A
LA.03 Rev. B	Not Used. **CTS:** N/A **ITS:** N/A

Description of Changes - NUREG-1431 Section 3.04.13

15-Mar-01

DOC Number	DOC Text	
M.01 Rev. A	CTS 15.3.1.D.2 provides limits on continued plant operation, if reactor coolant leakage is substantiated and is not evaluated as safe or is determined to exceed 10 gpm. Proposed ITS LCO 3.4.13 includes the following RCS operational leakage requirements; 1 gpm unidentified leakage, and 10 gpm identified leakage. Limiting unidentified leakage to 1 gpm is a reasonable minimum detectable amount that the containment air monitoring and containment sump level monitoring equipment can detect within a reasonable time period. Adopting this limit places additional requirements on plant operation and is, therefore, more restrictive.	
	CTS:	**ITS:**
	15.03.01.D.01	LCO 3.04.13 COND A RA A.1
M.02 Rev. E	CTS 15.3.1.D.2 requires a reactor shutdown be initiated as soon as practicable, but no later than within 24 hours after the leak was first detected, if the indicated leakage is not evaluated as safe or exceeds 10 gpm. Proposed ITS LCO 3.4.13 requires the leakage be returned to within limits in 4 hours, or be in MODE 3 in 6 hours and in MODE 5 in 36 hours. Adopting the requirement to place the plant in MODE 5 in 36 hours lowers the likelihood of further deterioration. These proposed actions place additional requirements on plant operation and are, therefore, more restrictive.	
	CTS:	**ITS:**
	15.03.01.D.02	LCO 3.04.13 B LCO 3.04.13 COND B
M.03 Rev. A	CTS 15.3.1.D does not specifically state the plant conditions for which the requirements apply. However, the Actions contained in CTS 15.3.1.D.2 require the plant to be shutdown, if leakage is unsafe or exceeds 10 gpm, and CTS 15.3.1.D.4 and 15.3.1.D.5 require the plant to be shutdown and cooled down to the cold shutdown condition, when primary to secondary SG leakage exceeds 500 gpd in either SG, or leakage exists from the RCPB, respectively. These actions imply the requirements are applicable when the plant is above the cold shutdown condition (MODE 5). Proposed ITS 3.4.13 has Applicability of MODES 1, 2, 3 and 4. Adopting the Applicability statement of LCO 3.4.13 places additional requirements on plant operation and is, therefore, more restrictive.	
	CTS:	**ITS:**
	15.03.01.D.02	LCO 3.04.13 LCO 3.04.13
M.04 Rev. A	CTS 15.3.1.D.5 requires a reactor shutdown and cooldown to the cold shutdown condition be initiated within 24 hours of detection, if reactor coolant leakage exists through a non-isolable fault in a reactor coolant system component. Proposed ITS LCO 3.4.13 requires that the unit be in MODE 3 in 6 hours and in MODE 5 in 36 hours, if pressure boundary leakage exists. Requiring the plant be in MODE 3 in 6 hours and in MODE 5 in 36 hours, is more restrictive than requiring "shutdown and cooldown to the cold shutdown condition" be initiated within 24 hours.	
	CTS:	**ITS:**
	15.03.01.D.05	LCO 3.04.13 COND B RA B.1 LCO 3.04.13 COND B RA B.2

Description of Changes - NUREG-1431 Section 3.04.13

15-Mar-01

DOC Number	DOC Text
M.05 Rev. A	CTS 15.4.1, Table 15.4.1-2, Item 16, requires a monthly evaluation of primary system leakage. Proposed ITS SR 3.4.13.1 requires the performance of a RCS water inventory balance at a frequency of 72 hours during steady state operation. The 72 hour frequency is more restrictive, but is a reasonable interval to trend leakage and recognizes the importance of early leakage detection in the prevention of accidents.

CTS:	ITS:
15.04.01 T 15.04.01-02 16	SR 3.04.13.01

Justification For Deviations - NUREG-1431 Section 3.04.13

15-Mar-01

JFD Number	JFD Text
01 Rev. A	NUREG 1431, LCO 3.4.13.d specifies a requirement of 1 gpm total primary to secondary leakage through all steam generators. The proposed ITS LCO 3.4.13 does not retain this requirement, because it is bounded by the "500 gpd primary to secondary leakage through any one SG" requirement. Point Beach current licensing basis assumes a maximum of 1 gpm total primary to secondary leakage through the SGs, but the current technical specifications (15.3.1.D.4) allow a maximum of 500 gpd in either SG. This requirement is more restrictive and will be retained in ITS.

ITS:	NUREG:
N/A	LCO 3.04.13 D

JFD Number	JFD Text
02 Rev. A	The brackets have been removed and the proper plant specific information has been provided.

ITS:	NUREG:
B 3.04.13	B 3.04.13
LCO 3.04.13 D	LCO 3.04.13 E

JFD Number	JFD Text
03 Rev. E	Not used.

ITS:	NUREG:
N/A	N/A

JFD Number	JFD Text
04 Rev. A	Reference to the General Design Criteria (GDC) of 10 CFR 50 Appendix A has been deleted from the Bases of the Technical Specifications, substituting reference to the appropriate section of the FSAR which specifies the Point Beach design criteria. Point Beach was constructed and licensed prior to the GDC being issued. The Point Beach construction permit was issued prior to the GDCs being issued in 1971. Point Beach was designed and constructed utilizing the 1967 proposed GDCs. Accordingly, reference has been provided to the appropriate criteria and section of the Point Beach FSAR which provides explanation of Point Beach's design basis.

ITS:	NUREG:
B 3.04.13	B 3.04.13

JFD Number	JFD Text
05 Rev. A	NUREG 1431 states that during a Steam Generator Tube Rupture event, the contaminated secondary fluid is only briefly released via safety valves, with the majority being steamed to the condenser. The SGTR analysis for Point Beach does not credit steaming to the condenser. Accordingly, the Bases for the ITS have been modified to delete reference to steaming to the condenser.

ITS:	NUREG:
B 3.04.13	B 3.04.13

3.4 REACTOR COOLANT SYSTEM (RCS)

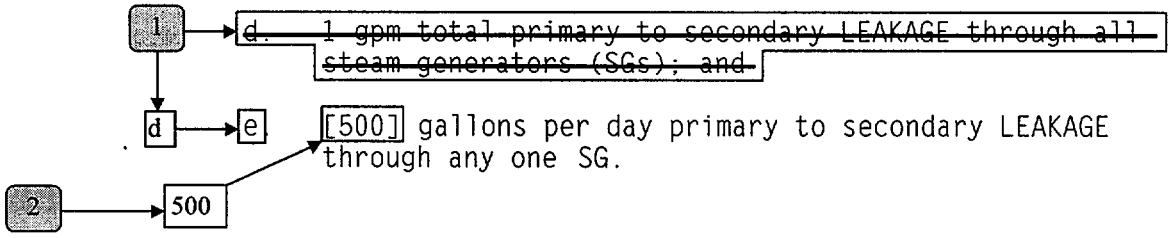
3.4.13 RCS Operational LEAKAGE

LCO 3.4.13 RCS operational LEAKAGE shall be limited to:

a. No pressure boundary LEAKAGE;

b. 1 gpm unidentified LEAKAGE;

c. 10 gpm identified LEAKAGE;



APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RCS LEAKAGE not within limits for reasons other than pressure boundary LEAKAGE.	A.1 Reduce LEAKAGE to within limits.	4 hours
B. Required Action and associated Completion Time of Condition A not met. OR Pressure boundary LEAKAGE exists.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

E
RAI 3.4.13-1

APPLICABILITY (continued)

In MODES 5 and 6, LEAKAGE limits are not required because the reactor coolant pressure is far lower, resulting in lower stresses and reduced potentials for LEAKAGE.

LCO 3.4.14, "RCS Pressure Isolation Valve (PIV) Leakage," measures leakage through each individual PIV and can impact this LCO. Of the two PIVs in series in each isolated line, leakage measured through one PIV does not result in RCS LEAKAGE when the other is leak tight. If both valves leak and result in a loss of mass from the RCS, the loss must be included in the allowable identified LEAKAGE.

ACTIONS

A.1

Unidentified LEAKAGE, identified LEAKAGE, or primary to secondary LEAKAGE in excess of the LCO limits must be reduced to within limits within 4 hours. This Completion Time allows time to verify leakage rates and either identify unidentified LEAKAGE or reduce LEAKAGE to within limits before the reactor must be shut down. This action is necessary to prevent further deterioration of the RCPB.

E
RAI 3.4.13-1

B.1 and B.2

If any pressure boundary LEAKAGE exists, or if unidentified LEAKAGE, identified LEAKAGE, or primary to secondary LEAKAGE cannot be reduced to within limits within 4 hours, the reactor must be brought to lower pressure conditions to reduce the severity of the LEAKAGE and its potential consequences. It should be noted that LEAKAGE past seals and gaskets is not pressure boundary LEAKAGE. The reactor must be brought to MODE 3 within 6 hours and MODE 5 within 36 hours. This action reduces the LEAKAGE and also re duces the factors that tend to degrade the pressure boundary.

The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. In MODE 5, the pressure stresses acting on the RCPB are much lower, and further deterioration is much less likely.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.13 RCS Operational LEAKAGE

LCO 3.4.13 RCS operational LEAKAGE shall be limited to:

a. No pressure boundary LEAKAGE;

b. 1 gpm unidentified LEAKAGE;

c. 10 gpm identified LEAKAGE;

d. 500 gallons per day primary to secondary LEAKAGE through any one SG.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RCS LEAKAGE not within limits for reasons other than pressure boundary LEAKAGE.	A.1 Reduce LEAKAGE to within limits.	4 hours
B. Required Action and associated Completion Time of Condition A not met. OR Pressure boundary LEAKAGE exists.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

E
RAI 3.4.13-1

B 3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.13 RCS Operational LEAKAGE

BASES

BACKGROUND

Components that contain or transport the coolant to or from the reactor core make up the RCS. Component joints are made by welding, bolting, rolling, or pressure loading, and valves isolate connecting systems from the RCS.

During plant life, the joint and valve interfaces can produce varying amounts of reactor coolant LEAKAGE, through either normal operational wear or mechanical deterioration. The purpose of the RCS Operational LEAKAGE LCO is to limit system operation in the presence of LEAKAGE from these sources to amounts that do not compromise safety. This LCO specifies the types and amounts of LEAKAGE.

FSAR Section 1.3.3 (Ref. 1), requires means for detecting and, to the extent practical, identifying the source of reactor coolant LEAKAGE.

The safety significance of RCS LEAKAGE varies widely depending on its source, rate, and duration. Therefore, detecting and monitoring reactor coolant LEAKAGE into the containment area is necessary. Quickly separating the identified LEAKAGE from the unidentified LEAKAGE is necessary to provide quantitative information to the operators, allowing them to take corrective action should a leak occur that is detrimental to the safety of the facility and the public.

A limited amount of leakage inside containment is expected from auxiliary systems that cannot be made 100% leaktight. Leakage from these systems should be detected, located, and isolated from the containment atmosphere, if possible, to not interfere with RCS leakage detection.

This LCO deals with protection of the reactor coolant pressure boundary (RCPB) from degradation and the core from inadequate cooling, in addition to preventing the accident analyses radiation release assumptions from being exceeded. The consequences of violating this LCO include the possibility of a loss of coolant accident (LOCA).

BASES

APPLICABLE SAFETY ANALYSES

Except for primary to secondary LEAKAGE, the safety analyses do not address operational LEAKAGE. However, other operational LEAKAGE is related to the safety analyses for LOCA; the amount of leakage can affect the probability of such an event. The safety analysis for an event resulting in steam discharge to the atmosphere assumes 500 gpd primary to secondary LEAKAGE as the initial condition.

Primary to secondary LEAKAGE is a factor in the dose releases outside containment resulting from a steam line break (SLB) accident. To a lesser extent, other accidents or transients involve secondary steam release to the atmosphere, such as a steam generator tube rupture (SGTR). The leakage contaminates the secondary fluid.

The FSAR (Ref. 2) analysis for SGTR assumes the contaminated secondary fluid is only briefly released via safety valves. The 500 gpd primary to secondary LEAKAGE is relatively inconsequential.

The SLB is more limiting for site radiation releases. The safety analysis for the SLB accident assumes 500 gpd primary to secondary LEAKAGE in one generator as an initial condition. The dose consequences resulting from the SLB accident are well within the limits defined in 10 CFR 100 or the staff approved licensing basis (i.e., a small fraction of these limits).

The RCS operational LEAKAGE satisfies Criterion 2 of the NRC Policy Statement.

LCO

RCS operational LEAKAGE shall be limited to:

a. Pressure Boundary LEAKAGE

No pressure boundary LEAKAGE is allowed, being indicative of material deterioration. LEAKAGE of this type is unacceptable as the leak itself could cause further deterioration, resulting in higher LEAKAGE. Violation of this LCO could result in continued degradation of the RCPB. LEAKAGE past seals and gaskets is not pressure boundary LEAKAGE.

b. Unidentified LEAKAGE

One gallon per minute (gpm) of unidentified LEAKAGE is allowed as a reasonable minimum detectable amount that the containment air monitoring and containment sump level monitoring equipment can detect within a reasonable time period. Violation of this LCO could result in continued degradation of the RCPB, if the LEAKAGE is from the pressure boundary.

BASES

LCO (continued)

c. Identified LEAKAGE

Up to 10 gpm of identified LEAKAGE is considered allowable because LEAKAGE is from known sources that do not interfere with detection of unidentified LEAKAGE and is well within the capability of the RCS Makeup System. Identified LEAKAGE includes LEAKAGE to the containment from specifically known and located sources, but does not include pressure boundary LEAKAGE or controlled reactor coolant pump (RCP) seal leakoff (a normal function not considered LEAKAGE). Violation of this LCO could result in continued degradation of a component or system.

d. Primary to Secondary LEAKAGE through Any One SG

The 500 gallons per day limit on one SG is based on the assumption that a single crack leaking this amount would not propagate to a SGTR under the stress conditions of a LOCA or a main steam line rupture. If leaked through many cracks, the cracks are very small, and the above assumption is conservative.

APPLICABILITY

In MODES 1, 2, 3, and 4, the potential for RCPB LEAKAGE is greatest when the RCS is pressurized.

In MODES 5 and 6, LEAKAGE limits are not required because the reactor coolant pressure is far lower, resulting in lower stresses and reduced potentials for LEAKAGE.

LCO 3.4.14, "RCS Pressure Isolation Valve (PIV) Leakage," measures leakage through each individual PIV and can impact this LCO. Of the two PIVs in series in each isolated line, leakage measured through one PIV does not result in RCS LEAKAGE when the other is leak tight. If both valves leak and result in a loss of mass from the RCS, the loss must be included in the allowable identified LEAKAGE.

ACTIONS

A.1

Unidentified LEAKAGE, identified LEAKAGE, or primary to secondary LEAKAGE in excess of the LCO limits must be reduced to within limits within 4 hours. This Completion Time allows time to verify leakage rates and either identify unidentified LEAKAGE or reduce LEAKAGE to within limits before the reactor must be shut down. This action is necessary to prevent further deterioration of the RCPB.

E
RAI 3.4.13-1

BASES

ACTIONS (continued) B.1 and B.2

If any pressure boundary LEAKAGE exists, or if unidentified LEAKAGE, identified LEAKAGE, or primary to secondary LEAKAGE cannot be reduced to within limits within 4 hours, the reactor must be brought to lower pressure conditions to reduce the severity of the LEAKAGE and its potential consequences. It should be noted that LEAKAGE past seals and gaskets is not pressure boundary LEAKAGE. The reactor must be brought to MODE 3 within 6 hours and MODE 5 within 36 hours. This action reduces the LEAKAGE and also reduces the factors that tend to degrade the pressure boundary.

E
RAI 3.4.13-1

The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. In MODE 5, the pressure stresses acting on the RCPB are much lower, and further deterioration is much less likely.

SURVEILLANCE REQUIREMENTS SR 3.4.13.1

Verifying RCS LEAKAGE to be within the LCO limits ensures the integrity of the RCPB is maintained. Pressure boundary LEAKAGE would at first appear as unidentified LEAKAGE and can only be positively identified by inspection. It should be noted that LEAKAGE past seals and gaskets is not pressure boundary LEAKAGE. Unidentified LEAKAGE and identified LEAKAGE are determined by performance of an RCS water inventory balance. Primary to secondary LEAKAGE is also measured by performance of an RCS water inventory balance in conjunction with effluent monitoring within the secondary steam and feedwater systems.

The RCS water inventory balance must be met with the reactor at steady state operating conditions (i.e., stable temperature, power level, pressurizer and makeup tank levels, makeup and letdown, and RCP seal injection and return flows). Therefore, a note is added allowing that this SR is not required to be performed until 12 hours after establishing steady state operation.

The 12 hour allowance provides sufficient time to collect and process all necessary data after stable plant conditions are established.

BASES

SURVEILLANCE REQUIREMENTS (continued)

Steady state operation is required to perform a proper inventory balance since calculations during maneuvering are not useful. For RCS operational LEAKAGE determination by water inventory balance, steady state is defined as stable RCS pressure, temperature, power level, pressurizer and makeup tank levels, makeup and letdown, and RCP seal injection and return flows.

An early warning of pressure boundary LEAKAGE or unidentified LEAKAGE is provided by the automatic systems that monitor the containment atmosphere radioactivity and the containment sump level. It should be noted that LEAKAGE past seals and gaskets is not pressure boundary LEAKAGE. These leakage detection systems are specified in LCO 3.4.15, "RCS Leakage Detection Instrumentation."

The 72 hour Frequency is a reasonable interval to trend LEAKAGE and recognizes the importance of early leakage detection in the prevention of accidents.

SR 3.4.13.2

This SR provides the means necessary to determine SG OPERABILITY in an operational MODE. The requirement to demonstrate SG tube integrity in accordance with the Steam Generator Tube Surveillance Program emphasizes the importance of SG tube integrity, even though this Surveillance cannot be performed at normal operating conditions.

REFERENCES

1. FSAR Section 1.3.3.
2. FSAR, Section 14.

DOC Number	DOC Text

A.30
Rev. D

CTS 15.3.1.F.3 requires at least 1 cps, attributable to neutrons, to register on a narrow range source range nuclear instrument during an approach to criticality. The CTS Bases state this requirement ensures the source range instrumentation is functioning properly. ITS LCO 3.3.1, Table 3.3.1-1, item #4, requires the source range neutron flux instrumentation be operable in MODE 2 (below P-6) and in MODES 3, 4 and 5 (with the RTBs closed and the Rod Control System capable of rod withdrawal). To verify this operability, a Channel Check and COT are required to be met. Therefore the requirement of CTS 15.3.1.F.3 is unnecessary and redundant, and is therefore not retained in ITS.

CTS:	ITS:
15.03.01.F.03	N/A

A.31
Rev. E

CTS 15.2.3.2.A states the "at power" reactor trips (low pressurizer pressure, high pressurizer level, and low reactor coolant flow for both loops) shall be unblocked when:
(1) Power range nuclear flux greater than or equal to 9% (+/- 1%) of rated power, or
(2) Turbine load greater than or equal to 10% of full load turbine pressure.

The proposed P-7 setpoint of Power Range Neutron Flux is < 10% RTP and Turbine Impulse Pressure < 10% turbine power, ensures the "at power" reactor trips (listed above) will be unblocked as specified in CTS 15.2.3.2.A. (Although the CTS specifies the "at power" trips shall be unblocked at a power range nuclear flux greater than or equal to 9% (+/- 1%) of rated power, the most limiting value of this expression is greater than or equal to 10% rated power.) Furthermore, specifying applicability of MODE 1, above the P-7 interlock, for the low pressurizer pressure and high pressurizer level, and MODE 1, above P-7 and below P-8 interlocks, for the reactor coolant flow (two loops) ensures their trip Functions will be available to perform their safety Functions as assumed in the accident analysis.

CTS:	ITS:
15.02.03.02.A.1	LCO 3.03.01 T3.03.01-01 17B-01
15.03.05 T 15.03.05-02 07	LCO 3.03.01 T3.03.01-01 07A
15.03.05 T 15.03.05-02 09	LCO 3.03.01 T3.03.01-01 08
15.03.05 T 15.03.05-02 10.B	LCO 3.03.01 T3.03.01-01 09B
15.04.01 T 15.04.01-01 05.B	LCO 3.03.01 T3.03.01-01 09B
15.04.01 T 15.04.01-01 06	LCO 3.03.01 T3.03.01-01 08

A.32
Rev. D

CTS 15.3.5 has been modified by the adoption of a Note allowing separate Condition entry for each Function. This Note is necessary because of the adoption of ITS Specification 1.3, which states, "Once a Condition as been entered, subsequent trains, subsystem, components, or variables expressed in the Condition discovered to be inoperable or not within limits, will not result in separate entry into the Condition, unless specifically stated." This restriction on Condition entry does not exist in the CTS, therefore, it is necessary to adopt the Note allowing separate Condition entry for each Function.

CTS:	ITS:
15.03.05	LCO 3.03.01 COND NOTE

DOC Number	DOC Text

L.09
Rev. E

CTS Table 15.4.1-1, Frequency P, Prior to reactor criticality, if not performed during the previous week," is revised into the proposed ITR SR 3.3.1.8, "Prior to reactor startup." This frequency is modified by a Note stating, "Only required when not performed within previous 92 days." This results in a relaxation of the current requirement, but is acceptable. Operating experience has shown that the Source and Intermediate Range Neutron Flux monitors are reliable following extended periods without testing. Per CTS requirements, these instruments are placed in operation during a normal shutdown for refueling. Prior to the startup following the refueling outage, operability of the Source and Intermediate Range Neutron Flux monitors is required to be verified. Past performance of these surveillances has demonstrated their reliability, despite the extended period since the last required verification of their operability. Therefore, extending the requirement to perform a COT on the Source and Intermediate Range Neutron Flux monitors from "Prior to criticality if not performed within the previous week" to "Prior to reactor startup [when] not performed within the previous 92 days," will not result in a reduction in the reliability of the instruments.

CTS:	ITS:
15.04.01 T 15.04.01-01 02.B	SR 3.03.01.08
15.04.01 T 15.04.01-01 03.B	SR 3.03.01.08

L.10
Rev. A

CTS Table 15.4.1-1, item #4, Reactor Coolant Temperature (OP deltaT and OT deltaT), Plant Conditions When Required, has been changed from "PWR, HOT S/D, COLD S/D", to "MODES 1, 2", in ITS Table 3.3.1-1, Functions 5 and 6. This results in a relaxation of the current requirements, but is acceptable because in MODES 3, 4, 5 and 6 the OT deltaT Function is not required to be OPERABLE due to insufficient heat production to be concerned about DNB. The OP deltaT Function is not required to be OPERABLE in MODES 3, 4, 5 and 6, because the reactor is not operating and there is insufficient heat production to be concerned about fuel overheating and fuel damage.

CTS:	ITS:
15.04.01 T 15.04.01-01 04	LCO 3.03.01 T3.03.01-01 05
	LCO 3.03.01 T3.03.01-01 06

Description of Changes - NUREG-1431 Section 3.03.01

15-Mar-01

DOC Number	DOC Text	
LA.01 Rev. E	The information contained in CTS Table 15.3.5-2, "Total No. of Channels" column and the "No. of Channels to Trip" column contain details of design which are not directly pertinent to describe the actual regulatory requirement. These details are not necessary to provide adequate protection of the public health and safety. This information has been moved to the FSAR. Changes to the FSAR will be controlled in accordance with the 10 CFR 50.59 process.	
	CTS:	**ITS:**
	15.03.05 T 15.03.05-02	FSAR
LA.02 Rev. D	Not used.	
	CTS:	**ITS:**
	N/A	N/A
LA.03 Rev. A	CTS Table 15.4.1-1 contains an instrument surveillance requirement for Residual Heat Removal (RHR) Pump Flow. These instruments do not necessarily relate directly to OPERABILITY of the associated system or the ability to maintain the affected parameter within limits. In general, the Standard Technical Specifications, NUREG-1431, do not require "indication only instruments" to be OPERABLE to support OPERABILITY of a system or component. Control of the availability and necessary compensatory activities for indication instruments are addressed by plant procedures and policies. Therefore RHR Pump Flow instrument channel surveillances are not required to be in the ITS to provide adequate protection of the public health and safety, and are therefore moved to licensee controlled documents. This approach provides an effective level of regulatory control and provides a more appropriate change control process.	
	CTS:	**ITS:**
	15.04.01 T 15.04.01-01 39	TRM 3.03.01 T 3.03.01-01 03
LA.04 Rev. D	CTS 15.4.1, Table 15.4.1-1, Function 1, Note 4 states the requirement to compare results of the incore detector measurements to NIS axial flux difference is performed by means of the moveable incore detector system. These details are not necessary to adequately describe the actual regulatory requirement, and can therefore be moved to the Bases without an impact on safety. The Bases will be controlled by the Bases Control Process in Section 5 of the proposed ITS.	
	CTS:	**ITS:**
	15.04.01 T 15.04.01-01 NOTE (4)	B 3.03.01

DOC Number	DOC Text
M.20 Rev. D	The Operator Actions of CTS 15.3.5-2, item #16.a, RCP Breaker Open Position (>50% full power), require the unit be in hot shutdown in 8 hours, if the Conditions of Column 3, Minimum Operable Channels, cannot be met for this function. ITS LCO 3.3.1, Condition J requires restoration of the inoperable channel to an OPERABLE status within 1 hour, OR reduce THERMAL POWER to < P-8 in the next 4 hours. This results in placing the unit in a MODE where this function is no longer required. This is more restrictive than the current requirement. CTS Table 15.3.5-2 requires the unit be in hot shutdown in 8 hours, but when THERMAL POWER is reduced to < 50% RTP, the actions can be discontinued per CTS 15.3.0.c. Therefore the CTS allows additional time to reach this condition. The 4 hour completion time of ITS LCO 3.3.1, Required Action J.2, is a reasonable amount of time to reduce THERMAL POWER to < P-9 from full power.

CTS:	ITS:
15.03.05 T 15.03.05-02 16.A	LCO 3.03.01 COND M LCO 3.03.01 COND M RA M.1 LCO 3.03.01 COND M RA M.2

M.21 Rev. E	The Operator Actions of CTS 15.3.5-2, item #16.b, RCP Breaker Open Position (10-50% full power), require the unit be in hot shutdown in 8 hours, if the Conditions of Column 3, Minimum Operable Channels, cannot be met for this function. ITS LCO 3.3.1, Condition N requires restoration of the inoperable channel to an OPERABLE status within 1 hour, OR reduce THERMAL POWER to < P-7 in the next 6 hours. This results in placing the unit in a MODE where this function is no longer required. This is more restrictive than the current requirement. CTS Table 15.3.5-2 requires the unit be in hot shutdown in 8 hours, but when THERMAL POWER is reduced to < 10% RTP, the actions can be discontinued per CTS 15.3.0.c. Therefore the CTS allows additional time to reach this condition. The 6 hour completion time of ITS LCO 3.3.1, Required Action N.2, is a reasonable amount of time to reduce THERMAL POWER to < P-7 from full power from full power in an orderly manner without challenging unit systems.

CTS:	ITS:
15.03.05 T 15.03.05-02 16.B	LCO 3.03.01 COND N LCO 3.03.01 COND N RA N.1 LCO 3.03.01 COND N RA N.2

BACKGROUND (Continued)

prevent the protection function actuation. These requirements are described in IEEE -279-1971 (Ref. 4). The actual number of channels required for each unit parameter is specified in Reference 1.

Two logic channels are required to ensure no single random failure of a logic channel will disable the RTS. The logic channels are designed such that testing required while the reactor is at power may be accomplished without causing trip. Provisions to allow removing logic channels from service during maintenance are unnecessary because of the logic system's designed reliability.

~~Trip Setpoints and~~ Allowable Values

~~The Trip Setpoints are the nominal values at which the bistables are set. Any bistable is considered to be properly adjusted when the "as-left" value is within the band for CHANNEL CALIBRATION accuracy (i.e., ± rack calibration + comparator setting accuracy).~~

~~The Trip Setpoints used in the bistables are based on the analytical limits stated in Reference 1. The selection of these Trip Setpoints is such that adequate protection is provided when all sensor and processing time delays are taken into account.~~ To allow for calibration tolerances, instrumentation uncertainties, instrument drift, and severe environment errors for those RTS channels that must function in harsh environments as defined by 10 CFR 50.49 (Ref. 5), the ~~Trip Setpoints and~~ Allowable Values specified in Table 3.3.1-1 in the accompanying LCO are conservatively adjusted with respect to the analytical limits. A detailed description of the methodology used to calculate the Trip Setpoints, including their explicit uncertainties, is provided in the ~~"RTS/ESFAS Setpoint Methodology Study" (Ref. 6).~~ The actual nominal Trip Setpoint entered into the bistable is more conservative than that specified by the Allowable Value to account for changes in random measurement errors detectable by a COT. One example of such a change in measurement error is drift during the surveillance interval. If the measured setpoint does not exceed the Allowable Value, the bistable is considered OPERABLE.

DGI-01, "Instrument Setpoint Methodology" (Ref. 5).

Errata #159

BACKGROUND (Continued)

Setpoints in accordance with the Allowable Value ensure that SLs are not violated during AOOs (and that the consequences of DBAs will be acceptable, providing the unit is operated from within the LCOs at the onset of the AOO or DBA and the equipment functions as designed). Note that in the accompanying LCO 3.3.1, the Trip Setpoints of Table 3.3.1-1 are the LSSS.

Each channel of the process control equipment can be tested on line to verify that the signal or setpoint accuracy is within the specified allowance requirements ~~of Reference 2~~. Once a designated channel is taken out of service for testing, a simulated signal is injected in place of the field instrument signal. The process equipment for the channel in test is then tested, verified, and calibrated. SRs for the channels are specified in the SRs section.

The ~~Trip Setpoints and~~ Allowable Values listed in Table 3.3.1-1 are based on the methodology described in Reference 6, which incorporates all of the kn own uncertainties applicable for each channel. The magnitudes of these uncertainties are factored into the determination of each Trip Setpoint. All field sensors and signal processing equipment for these channels are assumed to operate within the allowances of these uncertainty magnitudes.

Errata #159

The SSPS equipment is used for the decision logic processing of outputs from the signal processing equipment bistables. To meet the redundancy requirements, two trains of SSPS, each performing the same functions, are provided. If one train is taken out of service for maintenance or test purposes, the second train will provide reactor trip ~~and/or ESF actuation~~ for the unit. ~~If both trains are taken out of service or placed in test, a reactor trip will result.~~ Each train is packaged in its own cabinet for physical and electrical separation to satisfy separation and independence requirements. The system has been designed to trip in the event of a loss of power, directing the unit to a safe shutdown condition.

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.1.14

SR 3.3.1.14 is the performance of a TADOT of the Manual Reactor Trip, RCP Breaker Position, ~~and the~~ SI Input from ESFAS. This TADOT is performed every [18] months. The test shall independently verify the OPERABILITY of the undervoltage and shunt trip mechanisms for the Manual Reactor Trip Function for the Reactor Trip Breakers and Reactor Trip Bypass Breakers. ~~The Reactor Trip Bypass Breaker test shall include testing of the automatic undervoltage trip.~~

The Frequency is based on the known reliability of the Functions and the multichannel redundancy available, and has been shown to be acceptable through operating experience.

~~The SR is modified by a Note that excludes verification of setpoints from the TADOT. The Functions affected have no setpoints associated with them.~~

SR 3.3.1.15

SR 3.3.1.15 is the performance of a TADOT of Turbine Trip Functions. This TADOT is as described in SR 3.3.1.4, except that this test is performed prior to reactor startup. A Note ~~states that~~ this Surveillance is not required if it has been performed within the previous 31 days. ~~Verification of the Trip Setpoint does not have to be performed for this Surveillance.~~ Performance of this test will ensure that the turbine trip Function is OPERABLE prior to taking the reactor critical. This test cannot be performed with the reactor at power and must therefore be performed prior to reactor startup.

~~SR 3.3.1.16~~

~~SR 3.3.1.16 verifies that the individual channel/train actuation response times are less than or equal to the maximum values assumed in the accident analysis. Response time testing acceptance criteria are included in Technical Requirements Manual, Section 15 (Ref. 8). Individual component response times are not modeled in the analyses.~~

Insert SR 3.3.1.15

BASES

BACKGROUND (continued)

Generally, if a parameter is used only for input to the protection circuits, three channels with a two-out-of-three logic are sufficient to provide the required reliability and redundancy. If one channel fails in a direction that would not result in a partial Function trip, the Function is still OPERABLE with a two-out-of-two logic. If one channel fails, such that a partial Function trip occurs, a trip will not occur and the Function is still OPERABLE with a one-out-of-two logic.

Generally, if a parameter is used for input to the relay logic system and a control function, four channels with a two-out-of-four logic are sufficient to provide the required reliability and redundancy. The circuit must be able to withstand both an input failure to the control system, which may then require the protection function actuation, and a single failure in the other channels providing the protection function actuation. Again, a single failure will neither cause nor prevent the protection function actuation. These requirements are described in IEEE-279-1968 (Ref. 3). The actual number of channels required for each unit parameter is specified in Reference 1.

Two logic channels are required to ensure no single random failure of a logic channel will disable the RPS. The logic channels are designed such that testing required while the reactor is at power may be accomplished without causing trip. Provisions to allow removing logic channels from service during maintenance are unnecessary because of the logic system's designed reliability.

Allowable Values

To allow for calibration tolerances, instrumentation uncertainties, instrument drift, and severe environment errors for those RPS channels that must function in harsh environments as defined by 10 CFR 50.49 (Ref. 4), the Allowable Values specified in Table 3.3.1-1 in the accompanying LCO are conservatively adjusted with respect to the analytical limits. A detailed description of the methodology used to calculate the Trip Setpoints, including their explicit uncertainties, is provided in DGI-01, "Instrument Setpoint Methodology" (Ref. 5). The actual nominal Trip Setpoint entered into the bistable is more conservative than that specified by the Allowable Value to account for changes in random measurement errors detectable by a COT. One example of such a change in measurement error is drift during the surveillance interval. If the measured setpoint does not exceed the Allowable Value, the bistable is considered OPERABLE.

E
Errata #159

Setpoints in accordance with the Allowable Value ensure that SLs are not violated during AOOs (and that the consequences of DBAs will be acceptable, providing the unit is operated from within the LCOs at the onset of the AOO or DBA and the equipment functions as designed).

BASES

BACKGROUND (continued)

Note that in the accompanying LCO 3.3.1, the Allowable Values of Table 3.3.1-1 are the LSSS.

Each channel of the process control equipment can be tested on line to verify that the signal or setpoint accuracy is within the specified allowance requirements. Once a designated channel is taken out of service for testing, a simulated signal is injected in place of the field instrument signal. The process equipment for the channel in test is then tested, verified, and calibrated. SRs for the channels are specified in the SRs section.

The Allowable Values listed in Table 3.3.1-1 are based on the methodology described in Reference 5, which incorporates all of the known uncertainties applicable for each channel. The magnitudes of these uncertainties are factored into the determination of each Allowable Value. All field sensors and signal processing equipment for these channels are assumed to operate within the allowances of these uncertainty magnitudes.

E
Errata #159

Relay Logic System

The Relay Logic System equipment is used for the decision logic processing of outputs from the signal processing equipment bistables. To meet the redundancy requirements, two trains of Relay Logic System, each performing the same functions, are provided. If one train is taken out of service for maintenance or test purposes, the second train will provide reactor trip for the unit. Each train is packaged in its own cabinet for physical and electrical separation to satisfy separation and independence requirements. The system has been designed to trip in the event of a loss of power, directing the unit to a safe shutdown condition.

The Relay Logic System performs the decision logic for actuating a reactor trip, generates the electrical output signal that will initiate the required trip, and provides the status, permissive, and annunciator output signals to the main control room of the unit.

The bistable outputs from the signal processing equipment are sensed by the Relay Logic System equipment and combined into logic matrices that represent combinations indicative of various unit upset and accident transients. If a required logic matrix combination is completed, the system will initiate a reactor trip. Examples are given in the Applicable Safety Analyses, LCO, and Applicability sections of this Bases.

BASES

BACKGROUND (continued)

Reactor Trip Switchgear

The RTBs are in the electrical power supply line from the control rod drive motor generator set power supply to the CRDMs. Opening of the RTBs interrupts power to the CRDMs, which allows the shutdown rodsand control rods to fall into the core by gravity. Each RTB is equipped with a bypass breaker to allow testing of the RTB while the unit is at power. During normal operation the output from the relay logic system is a voltage signal that energizes the undervoltage coils in the RTBs and bypass breakers, if in use. When the required logic matrix combination is completed, the relay logic system output voltage signal is removed, the undervoltage coils are de-energized, the breaker trip lever is actuated by the de-energized undervoltage coil, and the RTBs and bypass breakers are tripped open. This allows the shutdown rods and control rods to fall into the core. In addition to the de-energization of the undervoltage coils, each RTB is also equipped with a shunt trip device that is energized to trip the breaker open upon receipt of a reactor trip signal from the relay logic system. Either the undervoltage coil or the shunt trip mechanism is sufficient by itself, thus providing a diverse trip mechanism.

APPLICABLE SAFETY ANALYSES, LCO, AND APPLICABILITY

The RPS functions to maintain the SLs during all AOOs and mitigates the consequences of DBAs in all MODES in which the RTBs are closed.

Each of the analyzed accidents and transients can be detected by one or more RPS Functions. The accident analysis described in Reference 2 takes credit for most RPS trip Functions. RPS trip Functions not specifically credited in the accident analysis are qualitatively credited in the safety analysis and the NRC staff approved licensing basis for the unit. These RPS trip Functions may provide protection for conditions that do not require dynamic transient analysis to demonstrate Function performance. They may also serve as backups to RPS trip Functions that were credited in the accident analysis.

The LCO requires all instrumentation performing an RPS Function, listed in Table 3.3.1-1 in the accompanying LCO, to be OPERABLE. Failure of any instrument renders the affected channel(s) inoperable and reduces the reliability of the affected Functions.

The LCO generally requires OPERABILITY of four or three channels in each instrumentation Function, one channel of Manual Reactor Trip in each logic Function, and two trains in each Automatic Trip Logic Function. Four OPERABLE instrumentation channels in a two-out-of-four configuration are generally required when one RPS channel is also used as a control system input. This configuration accounts for the

BASES

APPLICABLE SAFETY ANALYSES, LCO, AND APPLICABILITY (continued)

possibility of the shared channel failing in such a manner that it creates a transient that requires RPS action. In this case, the RPS will still provide protection, even with random failure of one of the other three protection channels. Three OPERABLE instrumentation channels in a two-out-of-three configuration are generally required when there is no potential for control system and protection system interaction that could simultaneously create a need for RPS trip and disable one RPS channel. The two-out-of-three and two-out-of-four configurations allow one channel to be tripped during maintenance or testing without causing a reactor trip. Specific exceptions to the above general philosophy exist and are discussed below.

Reactor Protection System Functions

The safety analyses and OPERABILITY requirements applicable to each RPS Function are discussed below:

1. Manual Reactor Trip

The Manual Reactor Trip ensures that the control room operator can initiate a reactor trip at any time by using one of four reactor trip switches in the control room. A Manual Reactor Trip accomplishes the same results as any one of the automatic trip Functions. It is used by the reactor operator to shut down the reactor whenever any parameter is rapidly trending toward its Allowable Value.

The LCO requires two Manual Reactor Trip channels to be OPERABLE. Each channel consists of two reactor trip switches (one in each train). Each channel activates the reactor trip breaker in both trains. Two independent channels are required to be OPERABLE so that no single random failure will disable the Manual Reactor Trip Function.

D
RAI 3.3.1-1
Errata #126

In MODE 1 or 2, manual initiation of a reactor trip must be OPERABLE. These are the MODES in which the shutdown rods and/or control rods are partially or fully withdrawn from the core. In MODE 3, 4, or 5, the manual initiation Function must also be OPERABLE with the RTBs closed and the Rod Control System capable of rod withdrawal. In this condition, inadvertent control rod withdrawal is possible. In MODE 3, 4, or 5, manual initiation of a reactor trip does not have to be OPERABLE if the Rod Control System is not capable of withdrawing the shutdown rods or control rods. If the rods cannot be withdrawn from the core or all of the rods are inserted, there is no need to be able to trip the reactor. In MODE 6, neither the shutdown rods nor the control rods are permitted to be withdrawn and the CRDMs are disconnected from the control rods and shutdown rods. Therefore, the manual initiation Function is not required.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.1.11

SR 3.3.1.11 is the performance of a CHANNEL CALIBRATION, as described in SR 3.3.1.10, every 18 months. This SR is modified by a Note stating that neutron detectors are excluded from the CHANNEL CALIBRATION. The CHANNEL CALIBRATION for the power range neutron detectors consists of a normalization of the detectors based on a power calorimetric and flux map performed above 15% RTP. The CHANNEL CALIBRATION for the source range and intermediate range neutron detectors consists of obtaining the detector plateau or preamp discriminator curves, evaluating those curves, and comparing the curves to the manufacturer's data. This Surveillance is not required for the NIS power range detectors for entry into MODE 2 or 1, and is not required for the NIS intermediate range detectors for entry into MODE 2, because the unit must be in at least MODE 2 to perform the test for the intermediate range detectors and MODE 1 for the power range detectors. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed on the 18 month Frequency.

SR 3.3.1.12

SR 3.3.1.12 is the performance of a COT of RPS interlocks every 18 months.

The Frequency is based on the known reliability of the interlocks and the multichannel redundancy available, and has been shown to be acceptable through operating experience.

SR 3.3.1.13

SR 3.3.1.13 is the performance of a TADOT of the Manual Reactor Trip, RCP Breaker Position, SI Input from ESFAS, and the Condenser Pressure-High and Circulating Water Pump Breaker Position inputs to the P-9 Interlock. This TADOT is performed every 18 months. The test shall independently verify the OPERABILITY of the undervoltage and shunt trip circuits for the Manual Reactor Trip Function for the Reactor Trip Breakers and the undervoltage trip circuits for the Reactor Trip Bypass Breakers.

E
Errata #101

The Frequency is based on the known reliability of the Functions and the multichannel redundancy available, and has been shown to be acceptable through operating experience.