FENOC
FirstEnergy Nuclear Operating Company

Beaver Valley Power Station
Route 168
P.O. Box 4
Shippingport, PA 15077-0004

Richard G. Mende
Director, Site Operations

724-682-7773

November 11, 2005
L-05-176

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

Subject: **Beaver Valley Power Station, Unit Nos. 1 and 2**
BV-1 Docket No. 50-334, License No. DPR-66
BV-2 Docket No. 50-412, License No. NPF-73
Supplement to License Amendment Request Nos. 296 and 169,
Improved Standard Technical Specification Conversion

This letter provides revised pages to the FirstEnergy Nuclear Operating Company (FENOC) License Amendment Request (LAR) Nos. 296 and 169 to convert the Beaver Valley Power Station (BVPS) Unit Nos. 1 and 2 Technical Specifications to the Improved Technical Specifications (ITS) for Westinghouse Plants, NUREG-1431.

The purpose of this supplement is to update the BVPS ITS conversion documentation contained in LAR Nos. 296 and 169 (ITS conversion) to reflect a more current status of other submitted BVPS LARs that impact the ITS conversion. The ITS conversion was submitted by FENOC letter L-05-027 dated February 25, 2005, and received by the NRC on February 28, 2005. As described in Volume 1 of the ITS conversion documentation, the changes proposed in the ITS conversion were based in part on draft pages from other LARs scheduled to be approved prior to the ITS conversion LAR. Volume 1 contained a status of the outstanding LARs at the time the ITS conversion was submitted. Since that time several LARs have been approved, one LAR was withdrawn, and new LARs were submitted. The revised pages included in this supplement update the ITS conversion documentation to reflect the changed status of the BVPS LARs that affect the ITS conversion. The supplement also contains one bases revision not associated with a change in LAR status.

As discussed with the NRC staff during the April 20, 2005 BVPS ITS LAR acceptance meeting, the withdrawal of BVPS LAR Nos. 314 (Unit 1) and 187 (Unit 2) resulted in extensive changes to the Post Accident Monitoring Technical Specification portion of the ITS conversion documentation. The changes to Post Accident Monitoring resulted in a significant repagination of Volume 5 of the ITS conversion LAR. Therefore, in order to avoid confusion, Volume 5 is being reissued in its entirety.

A001

The original BVPS ITS conversion LAR documentation consists of 10 volumes. This supplement provides a complete replacement for the original Volume 5 of the ITS conversion documentation (Attachment 1). In addition, this supplement contains a separate binder with individual replacement pages for the other affected ITS conversion LAR volumes (Attachment 2). The individual replacement pages are organized and described by LAR number and current status (i.e., approved, withdrawn, or submitted) or are described separately.

The information provided with this submittal does not change the evaluations or conclusions of the No Significant Hazards Consideration provided with the ITS conversion LAR. No new regulatory commitments are included in this submittal. If there are any questions concerning this matter, please contact Mr. Gregory A. Dunn, Manager - Fleet Licensing at 330-315-7243.

I declare under penalty of perjury that the foregoing is true and correct. Executed on November 11, 2005.

Sincerely,

Richard G. Mende

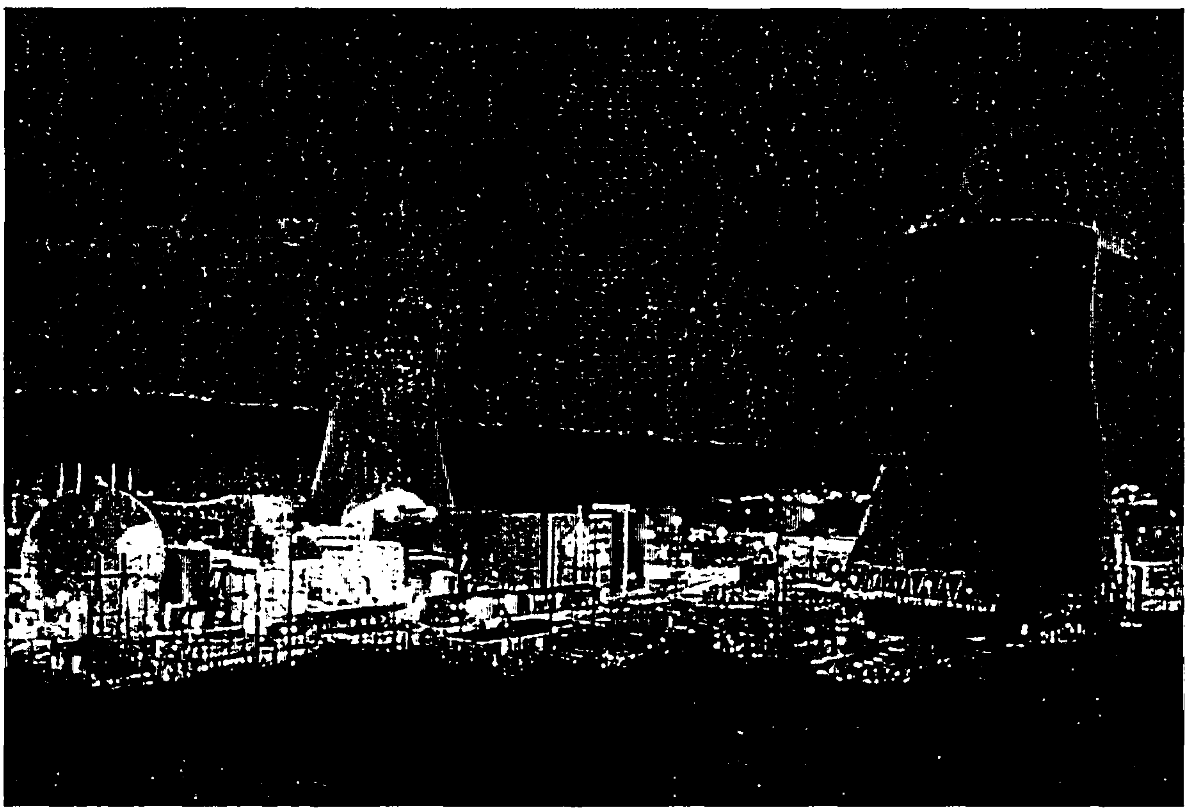
Attachments:
1. Replacement Volume 5 for the BVPS ITS Conversion (LARs 296 and 169).
2. Replacement pages for other volumes of the BVPS ITS Conversion (LARs 296 and 169).

c: Mr. T. G. Colburn, NRR Senior Project Manager (*) (2 hardcopies)
Mr. P. C. Cataldo, NRC Senior Resident Inspector (*)
Mr. S. J. Collins, NRC Region I Administrator (*)
Mr. D. A. Allard, Director BRP/DEP (*)
Mr. L. E. Ryan (BRP/DEP) (*)

(*) Electronic Copy

BEAVER VALLEY POWER STATION
UNITS 1 & 2

IMPROVED TECHNICAL SPECIFICATION CONVERSION
LICENSE AMENDMENT REQUEST



REVISION 1

REPLACEMENT PAGES

Complete Set Of Revision 1 Replacement Pages
For Initial Submittal Volumes 1-10 (Excluding Volume 5).
Replace The Original Submittal Pages With The Corresponding
Enclosed Revision 1 Pages.

FENOC

FirstEnergy Nuclear Operating Company

Beaver Valley Power Station
Route 168
P.O. Box 4
Shippingport, PA 15077-0004

Richard G. Mende
Director, Site Operations

724-682-7773

November 11, 2005
L-05-176

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

Subject: **Beaver Valley Power Station, Unit Nos. 1 and 2**
BV-1 Docket No. 50-334, License No. DPR-66
BV-2 Docket No. 50-412, License No. NPF-73
Supplement to License Amendment Request Nos. 296 and 169,
Improved Standard Technical Specification Conversion

This letter provides revised pages to the FirstEnergy Nuclear Operating Company (FENOC) License Amendment Request (LAR) Nos. 296 and 169 to convert the Beaver Valley Power Station (BVPS) Unit Nos. 1 and 2 Technical Specifications to the Improved Technical Specifications (ITS) for Westinghouse Plants, NUREG-1431.

The purpose of this supplement is to update the BVPS ITS conversion documentation contained in LAR Nos. 296 and 169 (ITS conversion) to reflect a more current status of other submitted BVPS LARs that impact the ITS conversion. The ITS conversion was submitted by FENOC letter L-05-027 dated February 25, 2005, and received by the NRC on February 28, 2005. As described in Volume 1 of the ITS conversion documentation, the changes proposed in the ITS conversion were based in part on draft pages from other LARs scheduled to be approved prior to the ITS conversion LAR. Volume 1 contained a status of the outstanding LARs at the time the ITS conversion was submitted. Since that time several LARs have been approved, one LAR was withdrawn, and new LARs were submitted. The revised pages included in this supplement update the ITS conversion documentation to reflect the changed status of the BVPS LARs that affect the ITS conversion. The supplement also contains one bases revision not associated with a change in LAR status.

As discussed with the NRC staff during the April 20, 2005 BVPS ITS LAR acceptance meeting, the withdrawal of BVPS LAR Nos. 314 (Unit 1) and 187 (Unit 2) resulted in extensive changes to the Post Accident Monitoring Technical Specification portion of the ITS conversion documentation. The changes to Post Accident Monitoring resulted in a significant repagination of Volume 5 of the ITS conversion LAR. Therefore, in order to avoid confusion, Volume 5 is being reissued in its entirety.

The original BVPS ITS conversion LAR documentation consists of 10 volumes. This supplement provides a complete replacement for the original Volume 5 of the ITS conversion documentation (Attachment 1). In addition, this supplement contains a separate binder with individual replacement pages for the other affected ITS conversion LAR volumes (Attachment 2). The individual replacement pages are organized and described by LAR number and current status (i.e., approved, withdrawn, or submitted) or are described separately.

The information provided with this submittal does not change the evaluations or conclusions of the No Significant Hazards Consideration provided with the ITS conversion LAR. No new regulatory commitments are included in this submittal. If there are any questions concerning this matter, please contact Mr. Gregory A. Dunn, Manager - Fleet Licensing at 330-315-7243.

I declare under penalty of perjury that the foregoing is true and correct. Executed on November 11, 2005.

Sincerely,

Richard G. Mende

Attachments:
1. Replacement Volume 5 for the BVPS ITS Conversion (LARs 296 and 169).
2. Replacement pages for other volumes of the BVPS ITS Conversion (LARs 296 and 169).

c: Mr. T. G. Colburn, NRR Senior Project Manager (*) (2 hardcopies)
Mr. P. C. Cataldo, NRC Senior Resident Inspector (*)
Mr. S. J. Collins, NRC Region I Administrator (*)
Mr. D. A. Allard, Director BRP/DEP (*)
Mr. L. E. Ryan (BRP/DEP) (*)

(*) Electronic Copy

REVISION 1 TO BEAVER VALLEY POWER STATION (BVPS) UNIT 1 AND UNIT 2 IMPROVED TECHNICAL SPECIFICATION (ITS) CONVERSION LICENSE AMENDMENT REQUEST (LAR) NOS. 296 (UNIT 1) AND 169 (UNIT 2)

REVISED PAGES FOR BVPS ITS CONVERSION DOCUMENTATION

ARRANGED BY INDIVIDUAL CHANGE

REVISION 1 TO BEAVER VALLEY POWER STATION (BVPS) UNIT 1 AND UNIT 2 IMPROVED TECHNICAL SPECIFICATION (ITS) CONVERSION LICENSE AMENDMENT REQUEST (LAR) NOS. 296 (UNIT 1) AND 169 (UNIT 2)

CHANGE NO. 1

WITHDRAWAL OF LAR NOS. 314 (UNIT 1) AND 187 (UNIT 2)

LAR Nos. 314 and 187 proposed changes to the BVPS Unit 1 and 2 Post Accident Monitoring and Radiation Monitoring Technical Specifications based on Westinghouse WCAP 15981, "Post Accident Monitoring Instrumentation Re-Definition for Westinghouse NSSS Plants." Due to the potential delay of BVPS ITS conversion LAR due to the Westinghouse WCAP review schedule, BVPS LAR Nos. 314 and 187 were withdrawn. This resulted in a substantial revision to the BVPS ITS conversion LAR Section 3.3B and some minor changes to Section 5.0 which contains a reporting requirement for the Post Accident Monitoring Technical Specification and Section 3.4 which contains some Radiation Monitoring Technical Specification pages. As part of this revision to the BVPS ITS conversion LAR, Section 3.3B (Volume 5 of the ITS conversion LAR) was reissued in its entirety. A new Volume 5, Rev.1 is included separately in this Revision 1 submittal. Separate from the withdrawal of LAR Nos. 314 and 187, revised pages for ITS 3.3.5, "*Loss of Power Diesel Generator Start and Bus Separation Instrumentation are also included in* the new Volume 5, Rev.1. ITS 3.3.5 pages in the ISTS markup and CTS markup were revised to add an additional significant digit to certain voltage values for the undervoltage relay allowable values specified in ITS 3.3.5. The voltage values used in ITS 3.3.5 were derived from the percent rated voltage values used in the CTS. The previous values used in ITS 3.3.5 were rounded to the nearest whole volt when converted from percent rated voltage. The revised values in ITS 3.3.5 are accurate to 0.1 volt instead of 1.0 volt. This change represents a more accurate reformat of the percent rated voltage presentation used in the CTS to the voltage values used in the ITS.

In addition to the new Volume 5, this change package includes the Section 5.0 and Section 3.4 replacement pages for the pages affected by the withdrawal of LAR Nos. 314 and 187. Each of the following new Section 3.4 and 5.0 pages is annotated at the top to identify the page as Revision 1 to the February 28, 2005 (date of NRC receipt) submittal.

NOTE: ALL PAGE NUMBERS ARE REFERENCED FROM THE LOWER RIGHT CORNER PAGE NUMBER ANNOTATED IN BOLD TEXT.

SECTION 3.4 REPLACEMENT PAGES

262	264
263	265

SECTION 5.0 REPLACEMENT PAGES

28	141
63	142
123	

Rev. 1 to 2/28/05 submittal

TABLE 3.3-6

ITS 3.4.15 RCS Leak Detection

RADIATION MONITORING INSTRUMENTATION

Changes to this material is addressed in the Instrumentation Section 3.3B

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	SETPOINT(3)	MEASUREMENT RANGE	ACTION
~~1. AREA MONITORS~~					
~~a. Deleted~~					
~~b. Containment Area (2RMR-RQ206 & 207)~~	~~2~~	~~1,2,3 & 4~~	~~$\leq 2.0 \times 10^4$ R/hr~~	~~1 to 10^7 R/hr~~	~~35~~
~~c. Control Room Area (2RMC-RQ201 & 202)~~	~~2~~	~~1,2,3,4, and (4)~~	~~$\leq$ 0.476 mR/hr~~	~~10^{-2} to 10^3 mR/hr~~	~~46,47~~
~~2. PROCESS MONITORS~~					
~~a. Containment~~					
i. Gaseous Activity (Xe-133) RCS Leakage Detection (2RMR-RQ303B)	1	1,2,3 & 4	N/A	10^{-6} to 10^{-1} µCi/cc	~~20~~
ii. Particulate Activity (I-131) RCS Leakage Detection (2RMR-RQ303A)	1	1,2,3 & 4	N/A	10^{-10} to 10^{-5} µCi/cc	~~20~~
~~b. Deleted~~					

ITS 3.4.15 Bases

LA1

ITS 3.4.15 Applicability & LCO

UFSAR

LA2

ITS 3.4.15 Actions

A3

ITS 3.4.15 RCS Leak Detection

TABLE 3.3-6

Rev. 1 to 2/28/05 submittal

ITS 3.4.15 RCS Leak Detection

Rev. 1 to 2/28/05 submittal

TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Changes to this material is addressed in the Instrumentation Section 3.3

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. ~~AREA MONITORS~~				
a. ~~Deleted~~				
b. ~~Containment Area (2RMR-RQ206 & 207)~~	~~S~~	~~R~~	~~M~~	~~1, 2, 3, 4~~
c. ~~Control Room Area (2RMC-RQ201 & 202)~~	~~S~~	~~R~~	~~M~~	~~1, 2, 3, 4, and ##~~
2. PROCESS MONITORS	12 hours	18 Months	92 days	ITS 3.4.15 Applicability
a. Containment				
i. Gaseous Activity RCS Leakage Detection (2RMR-RQ303B)	S	R#	M	1, 2, 3 & 4
ii. Particulate Activity RCS Leakage Detection (2RMR-RQ303A)	S	R#	M	1, 2, 3 & 4
b. Deleted	SR 3.4.15.1	SR 3.4.15.4	SR 3.4.15.2	

L3

~~# Surveillance interval may be extended to the upcoming refueling outage if the interval between refueling outages is greater than 18 months.~~

~~## During movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies.~~

M1

Changes to this material is addressed in the Instrumentation Section 3.3

Rev. 1 to 2/28/05 submittal

ITS 3.4.15 RCS Leak Detection

TABLE 3.3-6 (Continued)

TABLE NOTATIONS

(1) ~~Not Used.~~

(2) ~~Not used.~~

Changes to this material is addressed in the Instrumentation Section 3.3

(3) ~~Above background.~~

(4) ~~During movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies.~~

(5) ~~During movement of recently irradiated fuel assemblies within the containment and during movement of fuel assemblies over recently irradiated fuel assemblies within the containment.~~

ACTION STATEMENTS

ITS 3.4.15 Actions

A3

~~ACTION 20 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.6.1.~~

~~ACTION 21 - This Action is not used.~~

~~ACTION 22 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification~~

Changes to this material is addressed in the Instrumentation Section 3.3

~~ACTION 35 - With the number of OPERABLE channels less than required by the Minimum Channels OPERABLE requirement, either restore the inoperable channel(s) to OPERABLE status within 72 hours, or:~~

~~1) Initiate the preplanned alternate method of monitoring the appropriate parameter(s), and~~

~~2) Return the channel to OPERABLE status within 30 days, or, explain in the next Annual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.~~

NUREG-1431, Rev.3

F

5.6 Reporting Requirements

5.6.~~7~~ 5 Post Accident Monitoring Report

TSTF-369

When a report is required by Condition B or ~~G~~ of LCO 3.3.~~[~~3~~]~~, "Post Accident Monitoring (PAM) Instrumentation," a report shall be submitted within the following 14 days. The report shall outline 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.

~~5.6.8 6 [Tendon Surveillance Report~~

TSTF-369

29

~~Any abnormal degradation of the containment structure detected during the tests required by the Pre-stressed Concrete Containment Tendon Surveillance Program shall be reported to the NRC within 30 days. The report shall include a description of the tendon condition, the condition of the concrete (especially at tendon anchorages), the inspection procedures, the tolerances on cracking, and the corrective action taken.]~~

5.6.~~9~~ ~~7~~ 6 ~~[~~ Steam Generator Tube Inspection Report ~~]~~

Insert 9

30

~~- REVIEWER'S NOTES -~~

~~1. Reports required by the Licensee's current licensing basis regarding steam generator tube surveillance requirements shall be included here. An appropriate administrative controls format should be used.~~

~~2. These reports may be required covering inspection, test, and maintenance activities. These reports are determined on an individual basis for each unit and their preparation and submittal are designated in the Technical Specifications.~~

test interval of monthly could be applied such that the required testing is accomplished at the beginning of one month and the end of the next month effectively yielding a test interval of almost two months. As such, ISTS 5.5.8.a specifies "required Frequencies" (e.g., at least once every 31 days) for the common ASME terminology for inservice testing activities. It is not the intent of ISTS 5.5.8.a to identify all the potential test intervals that may be utilized in inservice testing activities, nor is the list provided in ISTS 5.5.8.a intended to limit the provisions of ISTS 5.5.8.b to only those frequencies. However, the ASME inservice test requirements utilizes Surveillance Frequencies not specified in ISTS 5.5.8.a. For example, the ASME inservice testing activities may utilize accelerated frequencies (typically some fraction of the common test frequencies listed in ISTS 5.5.8.a) and performance based frequencies which may not correspond to a common frequency listed in ISTS 5.5.8.a. Literal compliance with ISTS 5.5.8.b would preclude the application of the provisions of SR 3.0.2 from any test interval not specifically listed in ISTS 5.5.8.a.

The purpose of ISTS 5.5.8.b (ITS 5.5.4.b) is to provide the same allowances normally applicable to all other surveillance requirements (and some Action Completion Times) by the provisions of SR 3.0.2. SR 3.0.2 allows a surveillance interval (or in some cases an Action Completion Time) to be extended up to 25% longer than the stated interval. As stated in the ISTS Bases for SR 3.0.2, "This extension facilitates Surveillance scheduling and considers plant operating conditions that may not be suitable for conducting the Surveillance (e.g., transient conditions or other ongoing Surveillance or maintenance activities)". SR 3.0.2 provides this scheduling flexibility to help assure that the required surveillance tests will be performed in a safe and timely manner with proper consideration for existing plant conditions and other ongoing activities. The provisions of SR 3.0.2 are applicable to almost all technical specification surveillance testing (except where regulations, i.e., 10 CFR 50 Appendix J, may require a specific test Frequency). Given that the surveillance interval extensions allowed by SR 3.0.2 are applicable to such safety significant and time sensitive surveillance requirements as the verification of reactor trip system instrumentation setpoints, there is no reason why the provisions of SR 3.0.2 should not also be applied to all the ASME frequencies that may be specified for pump and valve inservice test activities. In addition, the proposed change is consistent with NUREG 1482, "Guidelines for Inservice Testing at Nuclear Power Plants," which acknowledges the applicability of the 25% Frequency extension allowed by the TS. As such, the proposed change is acceptable because it provides the necessary flexibility for scheduling all inservice test activities to assure the required testing is performed in both a safe and timely manner with proper consideration for existing plant conditions and other ongoing activities.

The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered. When a loss of safety function is caused by the inoperability of a single Technical Specification support system, the appropriate Conditions and Required Actions to enter are those of the support system.

INSERT 3

5.5.13 Battery Monitoring and Maintenance Program

This Program provides for battery restoration and maintenance, based on [the recommendations of IEEE Standard 450-1995, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications," or of the battery manufacturer] including the following:

a. Actions to restore battery cells with float voltage < 2.13 V, and

b. Actions to equalize and test battery cells that had been discovered with electrolyte level below the top of the plates.

INSERT 4

5.5.9 Diesel Fuel Oil Testing Program

A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling and testing requirements, and acceptance criteria, all in accordance with applicable ASTM Standards. The purpose of the program is to establish the following:

INSERT 5

5.6.5 Post Accident Monitoring Report

When a report is required by Condition B or F of LCO 3.3.3, "Post Accident Monitoring (PAM) Instrumentation," a report shall be submitted within the following 14 days. The report shall outline 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.

A.21 CTS 4.8.1.1.2.d and 4.8.1.1.2.e provide diesel fuel oil testing requirements. ITS 5.5.9 includes these requirements in a program in the Administrative Controls Chapter 5. As such, a general program statement has been added as ITS 5.5.9. The ITS also includes wording specific to the general descriptions of the diesel fuel oil testing specified in the Bases of ITS 3.8.3. This changes the CTS by providing a Diesel Fuel Oil Testing Program in the Administrative Controls Section of the Technical Specifications. In addition, a statement of applicability of ITS SR 3.0.2 (CTS 4.0.2) and ITS SR 3.0.3 (CTS 4.0.3) is provided to clarify that the allowances for Frequency extensions do apply to the test described in the Diesel Fuel Oil Testing Program. Consistent with NUREG-1431, Section 5.0, "Administrative Controls" requirements are not explicitly covered by the allowances provided in Section 3.0, "LCO/SR Applicability." Specific Frequency allowances must be directly stated in Section 5.0. As such, a statement of applicability of ITS SR 3.0.2 and SR 3.0.3 was added consistent with the CTS allowances pertaining to CTS 4.8.1.1.2.d and 4.8.1.1.2.e.

This change is acceptable since it is a clarification needed to maintain provisions that would be allowed in the LCO sections of the Technical Specifications and includes no new requirements. The change does not result in technical changes and is designated as administrative.

A.22 CTS 6.8.6 states that "Limitations on the operability..." ITS 5.5.2 states "Limitations of the functional capability..." The CTS has been revised to clarify the text of the requirement. The word "operability" is used in the Technical Specifications as a defined term. The proposed change to the wording is to prevent a misinterpretation of the usage of the word "operability." The change does not result in technical changes and is designated as administrative.

A.23 CTS 4.8.1.1.2.d and 4.8.1.1.2.e provide diesel fuel oil testing requirements associated with the Operability requirements of the diesel generators. ISTS 5.5.13 (ITS 5.5.9) includes a program for these requirements. The CTS are revised to conform to the ISTS. This changes the CTS by adding the Diesel Fuel Oil Testing Program. This program is provided to implement required testing of both new and stored fuel oil. The specific wording associated with this program may be found in ITS 5.5.9.

The changes are acceptable since they support implementation of the requirements of the ITS and the UFSAR. This change is designated as an administrative change since the programmatic requirements were moved from other sections in the Technical Specifications.

A.24 CTS 3.3.3 provides the Actions for inoperable Post Accident Monitoring (PAM) instrumentation. The corresponding ITS LCO 3.3.3 Required Action Conditions B and F reference Specification 5.6.5 for the appropriate Action. Specification 5.6.5 provides the details for preparing and submitting a report to the NRC. As such, the addition of this report to Section 5.0 is associated with the changes made to the PAM Technical Specification Actions.

The addition to Section 5.0 of this reporting requirement does not result in a technical change to the CTS reporting requirements. The addition of this reporting requirement only reflects the changes made to the CTS PAM Specification Actions

that reference the report. The changes to the PAM Actions and Section 5.0 are necessary to conform to the ISTS. The technical impact of the revised PAM Actions (including the reporting requirements contained in Specification 5.6.5 for those Actions) are evaluated and discussed in the DOCs associated with ITS 3.3.3, PAM Instrumentation. As the technical changes that result from conforming to this aspect of the ISTS are associated with the PAM Actions and are evaluated and discussed in the DOCs associated with ITS 3.3.3, this change to the Administrative Controls Section is designated as an administrative change.

A.25 CTS 6.17.a specifies the containment leakage rate acceptance criteria for the first unit startup following testing in accordance with the Containment Leakage Rate Testing Program. ITS 5.5.12.d provides a clarification that this criteria must be met "prior to MODE 4."

This is acceptable since proposed wording clarifies the intended transition for meeting the containment system LCOs in accordance with LCO 3.0.4 following testing. The change does not result in technical changes and is designated as administrative.

A.26 (Unit 2 only) CTS 4.7.7.1.d provides a general level of detail for the charcoal adsorber testing. ITS 5.5.7.c provides additional details specifying the use of a "slotted tube sampler."

This change is acceptable since the level of detail proposed in the ITS is consistent with the requirements specified in the CTS. A similar level of detail describing this testing is provided in the Unit 1 CTS. This level of detail in the Unit 1 CTS specifies the use of a slotted tube sampler. The change does not result in technical changes and is designated as administrative.

REVISION 1 TO BEAVER VALLEY POWER STATION (BVPS) UNIT 1 AND UNIT 2 IMPROVED TECHNICAL SPECIFICATION (ITS) CONVERSION LICENSE AMENDMENT REQUEST (LAR) NOS. 296 (UNIT 1) AND 169 (UNIT 2)

CHANGE NO. 2

APPROVAL OF LAR NO. 184 (UNIT 2)

LAR No. 184 proposed changes to the BVPS Unit 2 Technical Specifications that would remove the requirement for periodic response time testing for selected sensors and selected protection channel components. LAR No.184 was approved by the NRC in Unit 2 license amendment No. 147 issued March 24, 2005 (TAC No. MC3894). The BVPS ITS Conversion LAR submitted in February of 2005, anticipated the approval of Unit 2 LAR 184 and incorporated pages from LAR 184 marked as draft pages referencing the LAR number. Therefore, the enclosed replacement pages are the same as the original pages with the exception that the "Draft" annotation is removed and the new amendment number (147) is included in the footer. Each of the following replacement pages is also annotated at the top to identify the page as Revision 1 to the February 28, 2005 (date of NRC receipt) submittal.

NOTE: ALL PAGE NUMBERS ARE REFERENCED FROM THE LOWER RIGHT CORNER PAGE NUMBER ANNOTATED IN BOLD TEXT.

<u>SECTION 1.0 REPLACEMENT PAGES</u>

42

43

50

<u>SECTION 3.3A REPLACEMENT PAGES</u>

101

<u>SECTION 3.3C REPLACEMENT PAGES</u>

88

~~1.15 THROUGH 1.17 (DELETED)~~

QUADRANT POWER TILT RATIO (QPTR)

~~1.18~~ QPTR shall be the ratio of the maximum upper excore detector calibrated output to the average of the upper excore detector calibrated outputs, or the ratio of the maximum lower excore detector calibrated output to the average of the lower excore detector calibrated outputs, whichever is greater.

DOSE EQUIVALENT I-131

The thyroid dose conversion factors used for this calculation shall be those listed in ICRP 30, Supplement to Part 1, page 192-212, Table titled, "Committed Dose Equivalent in Target Organs or Tissues per Intake of Unit Activity".

A.18

~~1.19~~ DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries/gram) that alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. ~~The DOSE EQUIVALENT I-131 is calculated with the following equation:~~

$$\cancel{C_{I-131_{D.E.}} = C_{I-131} + \frac{C_{I-132}}{170} + \frac{C_{I-133}}{6} + \frac{C_{I-134}}{1000} + \frac{C_{I-135}}{34}}$$

~~Where "C" is the concentration, in microcuries/gram of the iodine isotopes. This equation is based on dose conversion factors derived from ICRP-30.~~

Replace with ISTS STAGGERED TEST BASIS definition

A.11

STAGGERED TEST BASIS

~~1.20 A STAGGERED TEST BASIS shall consist of:~~

~~a. A test schedule for n systems, subsystems, trains or other designated components obtained by dividing the specified test interval into n equal subintervals;~~

~~b. The testing of one (1) system, subsystem, train or other designated component at the beginning of each subinterval.~~

A.6

~~FREQUENCY NOTATION~~

~~1.21 The FREQUENCY NOTATION specified for the performance of Surveillance Requirements shall correspond to the intervals defined in Table 1.2.~~

REACTOR TRIP SYSTEM (RTS) RESPONSE TIME

RTS

that

~~1.22~~ The REACTOR TRIP SYSTEM RESPONSE TIME shall be ~~the~~ that time interval from when the monitored parameter exceeds its RTS trip setpoint at the channel sensor until loss of stationary gripper coil voltage. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.

ENGINEERED SAFETY FEATURE RESPONSE TIME

ESF

~~1.23~~ The ~~ENGINEERED SAFETY FEATURE~~ RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.

AXIAL FLUX DIFFERENCE (AFD)

~~1.24~~ ~~AXIAL FLUX DIFFERENCE~~ AFD shall be the difference in normalized flux signals between the top and bottom halves of a two-section excore neutron detector.

PHYSICS TESTS

~~1.25~~ PHYSICS TESTS These tests are: shall a. be those tests performed Unit 2 UFSAR to measure the fundamental nuclear characteristics of the reactor core and related instrumentation ~~and~~ b. ~~1)~~ ~~d~~escribed in Chapter 14.0 and Unit 1 UFSAR Chapter 13, ~~of the FSAR~~, ~~2)~~ ~~a~~uthorized under the provisions of 10 CFR 50.59, or c. ~~3)~~ ~~o~~therwise approved by the Commission.

$\bar{E}$ - AVERAGE DISINTEGRATION ENERGY

~~1.26~~ $\bar{E}$ shall be the average ~~sum~~ (weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling) of the sum of the average beta and gamma energies per disintegration (in MeV) for isotopes, other than iodines, with half lives > ~~greater than~~ 15 minutes, making up at least 95% of the total non-iodine activity in the coolant.

~~SOURCE CHECK~~

~~1.27 A SOURCE CHECK shall be the qualitative assessment of channel response when the channel sensor is exposed to a radioactive source.~~

A.6

~~PROCESS CONTROL PROGRAM~~

~~1.28 The PROCESS CONTROL PROGRAM (PCP) shall contain the current formulas, sampling, analyses, test, and determinations to be made to ensure that processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61, and 71, State regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste.~~

~~1.29 DELETED~~

INSTRUMENTATION

3/4.3.2 ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

SURVEILLANCE REQUIREMENTS

THIS MATERIAL IS NOT PART OF DEFINITION SECTION CHANGES SHOWN IN SECTION 3.3

4.3.2.1.1 Each engineered safety feature actuation system instrumentation channel and interlock and the automatic actuation logic with master and slave relays shall be demonstrated OPERABLE by the performance of the ESFAS Instrumentation Surveillance Requirements(1) during the MODES and at the frequencies shown in Table 4.3-2.

4.3.2.1.2 The logic for the interlocks shall be demonstrated OPERABLE during the at power CHANNEL FUNCTIONAL TEST of channels affected by interlock operation. The total interlock function shall be demonstrated OPERABLE at least once per 18 months during CHANNEL CALIBRATION testing of each channel affected by interlock operation.

4.3.2.1.3 The ENGINEERED SAFETY FEATURES RESPONSE TIME of each ESF function shall be verified to be within the limit at least once per 18 months. Each verification shall include at least one logic train such that both logic trains are verified at least once per 36 months and one channel per function such that all channels are verified at least once per N times 18 months where N is the total number of redundant channels in a specific ESF function as shown in the "Total No. Of Channels" Column of Table 3.3-3.

ISTS ACTUATION LOGIC TEST Definition

A.1

L.4 → or actual

combinations

(1) ~~For the automatic actuation logic, the surveillance requirements~~ shall be the application of various simulated input ~~conditions~~ in conjunction with each possible interlock logic state and verification of the required logic output including, as a minimum, a continuity check of output devices. For the actuation relays, the surveillance requirements shall be the energization of each master and slave relay and verification of OPERABILITY of each relay. The test of master relays shall include a continuity check of each associated slave relay. The test of slave relays (to be performed at least once per 92 days in lieu of at least once per 31 days) shall include, as a minimum, a continuity check of associated actuation devices that are not testable. The slave relay test frequency can be extended to once per 12 months provided a satisfactory contact loading analysis has been completed, and a satisfactory slave relay service life has been established, for the slave relay being tested.

Frequency info. retained in the SR in Section 3.3.2

A.20

Replace with ISTS MASTER RELAY TEST Definition ← A.19

L.5 → Replace with ISTS SLAVE RELAY TEST Definition

UNIT 2 PAGES

~~3/4.3~~ INSTRUMENTATION

~~3/4.3.1~~ REACTOR TRIP SYSTEM INSTRUMENTATION

ITS 3.3.1

A1

A2

LIMITING CONDITION FOR OPERATION

~~3.3.1.1 As a minimum,~~ the reactor trip system instrumentation for each Function in ~~channels and interlocks of~~ Table ~~3.3-1~~ 3.3.1-1 shall be OPERABLE.

APPLICABILITY: ~~As shown in~~ According to Table ~~3.3-1~~ 3.3.1-1.

ACTION: As shown in Table ~~3.2-1~~ 3.3.1-1. ~~(2)~~

ITS Cond. A

SURVEILLANCE REQUIREMENTS

A3

Replaced by individual SRs assigned to each Function on ITS Table 3.3.1-1.

~~4.3.1.1.1 Each reactor trip system instrumentation channel and interlock and automatic trip logic shall be demonstrated OPERABLE by the performance of the Reactor Trip System Instrumentation Surveillance Requirements[(1)] during the MODES and at the frequencies shown in Table 4.3-1.~~

~~4.3.1.1.2 The logic for the interlocks shall be demonstrated OPERABLE during the at power CHANNEL FUNCTIONAL TEST of channels affected by interlock operation. The total interlock function shall be demonstrated OPERABLE at least once per 18 months during CHANNEL CALIBRATION testing of each channel affected by interlock operation.~~

~~4.3.1.1.3 The REACTOR TRIP SYSTEM RESPONSE TIME of each reactor trip function shall be verified to be within its limit at least once per 18 months. Neutron detectors are exempt from response time testing.~~ Each verification shall include at least one logic train such that both logic trains are verified at least once per 36 months and one channel per function such that all channels are verified at least once every N times 18 months where N is the total number of redundant channels in a specific reactor trip function as shown in the "~~Total No. of~~ Required Channels" column of Table ~~3.3-1~~ 3.3.1-1.

A4

STAGGERED TEST BASIS

L1 or actual

~~(1)~~ For the automatic trip logic, the surveillance requirements shall be the application of various simulated or actual input combinations in conjunction with each possible interlock logic state and verification of the required logic output including, as a minimum, a continuity check of output devices.

~~(2)~~ Separate ACTION statement entry is allowed for each Function.

ITS Section 1.0, Definitions ← A5

ITS 3.3.1 Actions Note

SR BASES ← LA1

Rev. 1 to 2/28/05 submittal

~~3/4.3.2~~ 3.3.2 ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

A.2

SURVEILLANCE REQUIREMENTS

~~4.3.2.1.1 Each engineered safety feature actuation system instrumentation channel and interlock and the automatic actuation logic with master and slave relays shall be demonstrated OPERABLE by the performance of the ESFAS Instrumentation Surveillance Requirements[(1)] during the MODES and at the frequencies shown in Table 4.3-2.~~

L16

~~4.3.2.1.2 The logic for the interlocks shall be demonstrated OPERABLE during the at power CHANNEL FUNCTIONAL TEST of channels affected by interlock operation.~~ The ~~total~~ interlock function shall ~~be demonstrated~~ OPERABLE at least once per 18 ~~months during CHANNEL~~ CALIBRATION testing ~~of each channel~~ affected by interlock operation.

4.3.2.1.3 The ~~ENGINEERED SAFETY FEATURES~~ RESPONSE TIME of each ESF function shall ~~be verified to be within the limit at least once per 18 months.~~ Each verification shall include at least one logic train such that both logic trains are verified at least once per 36 months and one channel per function such that all channels are verified at least once per N times 18 months where N is the total number of redundant channels in a specific ESF function as shown in the "~~Total No. Of~~ Channels" Column of Table 3.3-3.

Required

Staggered Test Basis

SR Bases

SR 3.3.2.9 Note: Not required to be performed for the turbine-driven AFW Pump until 24 hours after SG pressure is > 600 psig.

LA1 A3 L1

(1) For the automatic actuation logic, the surveillance requirements shall be the application of various simulated input conditions in conjunction with each possible interlock logic state and verification of the required logic output including, as a minimum, a continuity check of output devices. For the actuation relays, the surveillance requirements shall be the energization of each master and slave relay and verification of OPERABILITY of each relay. The test of master relays shall include a continuity check of each associated slave relay. The test of slave relays (to be performed at least once per 92 days in lieu of at least once per 31 days) shall include, as a minimum, a continuity check of associated actuation devices that are not testable. The slave relay test frequency can be extended to once per 12 months provided a satisfactory contact loading analysis has been completed, and a satisfactory slave relay service life has been established, for the slave relay being tested.

Definition requirements moved to Section 1.0. Changes to the definitions of test requirements are addressed in TS Section 1.0 (Definitions).

Surveillance Frequency requirements moved to SR 3.3.2.6 and assigned to the applicable Actuation Relay Functions on CTS Table 4.3-2 and ITS Table 3.3.2-1 (see Unit 2 CTS Table 4.3-2 markup for details)

REVISION 1 TO BEAVER VALLEY POWER STATION (BVPS) UNIT 1 AND UNIT 2 IMPROVED TECHNICAL SPECIFICATION (ITS) CONVERSION LICENSE AMENDMENT REQUEST (LAR) NOS. 296 (UNIT 1) AND 169 (UNIT 2)

CHANGE NO. 3

APPROVAL OF LAR NOS. 329 (UNIT 1) AND 198 (Unit 2)

LAR Nos. 329 and 198 proposed changes to the Administrative Controls Section of the Technical Specifications that would delete the requirements to submit the Monthly Operating Report and the Occupational Radiation Exposure Report. The LARs were in accordance with the consolidated line item improvement process (CLIIP) to implement NRC approved Technical Specification Task Force (TSTF) Traveler No. 369. LAR Nos. 329 and 198 were approved by the NRC in license amendment Nos. 266 (Unit 1) and 148 (Unit 2) issued July 28, 2005 (TAC Nos. MC6176 and MC 6177). The BVPS ITS Conversion LAR submitted in February of 2005 anticipated the approval of LAR Nos. 329 and 198 and incorporated pages from these LARs marked as draft pages referencing the appropriate LAR number. Therefore, the enclosed replacement pages are the same as the original pages with the exception that the "Draft" annotation is removed and the new amendment number (266 or 148 as appropriate) is included in the footer. Note that pages still affected by an outstanding LAR (i.e., draft pages) will not have an amendment number in the footer. Each of the following replacement pages is also annotated at the top to identify the page as Revision 1 to the February 28, 2005 (date of NRC receipt) submittal.

NOTE: ALL PAGE NUMBERS ARE REFERENCED FROM THE LOWER RIGHT CORNER PAGE NUMBER ANNOTATED IN BOLD TEXT.

SECTION 3.1 REPLACEMENT PAGES

155

SECTION 5.0 REPLACEMENT PAGES

75

77

78

3.1.7 Rod

Rev. 1 to 2/28/05 submittal

REACTIVITY CONTROL SYSTEMS

POSITION INDICATION ~~SYSTEMS-OPERATING~~ **Unit 1**

A1 **ITS 3.1.7.1**

3.1.7.1 **Unit 1** Rod Position Indication

LIMITING CONDITION FOR OPERATION

and the Demand Position Indication

~~3.1.3.2~~ The ~~shutdown and control~~ rod position indication system shall be OPERABLE ~~as follows:~~

Group Demand Counter(1), 1 per group

Individual analog rod position instrument channel, 1 per rod ±12 steps(1) accuracy~~(3)~~

3.1.7.1 Bases

LA1

ITS 3.1.4, Rod Group Alignment Limits LCO & SR Notes

3.1.7.1 Bases

L2

~~(1)~~ During the first hour following rod motion, the group demand counter is the primary indicator of precise rod position information, with the analog channels displaying general rod movement information. ~~For power levels below 50%,~~ a 1-hour thermal soak time is allowed before the analog channels are required to perform within the specified accuracy.

~~(2)~~ ~~For power levels below 50%~~ a one hour thermal soak time is allowed.

~~(3) Malfunctions of the group demand counters or analog RPI, providing no actual rod misalignment existed during the malfunction, shall be reported.~~

L1

PROCEDURES (Continued)

The program shall include:

1. The limits for concentrations of hydrogen and oxygen in the Waste Gas Holdup System and a surveillance program to ensure the limits are maintained. Such limits shall ensure that the concentration of hydrogen and oxygen is maintained below the flammability limits.

2. A surveillance program to ensure that the quantity of radioactivity contained in each connected group of Gaseous Waste Storage Tanks is less than the amount that would result in a whole body exposure of > 0.5 rem to any individual in an unrestricted area, in the event of an uncontrolled release of the tanks' contents, and

3. A surveillance program to ensure that the quantity of radioactivity contained in all outdoor liquid radwaste tanks that are not surrounded by liners, dikes, or walls, capable of holding the tanks' contents and that do not have tank overflows and surrounding area drains connected to the Liquid Radwaste Treatment System is less than the amount that would result in concentrations greater than the limits of 10 CFR 20, Appendix B, Table 2, Column 2, at the nearest potable water supply and the nearest surface water supply in an unrestricted area, in the event of an uncontrolled release of the tanks' contents.

SR 3.0.2 and 3.0.3

The provisions of ~~Specifications 4.0.2 and 4.0.3~~ are applicable to the Explosive Gas and Storage Tank Radioactivity Monitoring Program surveillance frequencies.

5.6 ~~6.9~~ REPORTING REQUIREMENTS

The following reports shall be submitted in accordance with 10 CFR 50.4.

~~6.9.1 DELETED~~

REPORTING REQUIREMENTS (Continued)

5.6.1 ~~6.9.2~~ ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

- NOTE -

A single submittal may be made for a multiple unit station. The submittal should combine sections common to all units at the station.

- -

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted before May 15 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in the Offsite Dose Calculation Manual (ODCM) and in 10 CFR Part 50, Appendix I Sections IV.B.2, IV.B.3, and IV.C.

5.6.2 ~~6.9.3~~ ~~ANNUAL~~ RADIOACTIVE EFFLUENT RELEASE REPORT

- NOTE -

A single submittal may be made for a multi-unit station. The submittal should combine those sections that are common to all units at the station; however, for units with separate radwaste systems, the submittal shall specify the releases of radioactive material from each unit.

- -

The ~~Annual~~ Radioactive Effluent Release Report covering the operation of the unit during the previous year shall be submitted prior to May 1 of each year in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be consistent with the objectives outlined in the ODCM and Process Control Program (PCP) and in conformance with 10 CFR 50.36a and 10 CFR Part 50, Appendix I Section IV.B.1.

REPORTING REQUIREMENTS (Continued)

~~6.9.4 Deleted~~

5.6.3 ~~6.9.5~~ CORE OPERATING LIMITS REPORT (COLR)

a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:

LCO 3.1.1 SHUTDOWN MARGIN (SDM)
LCO 3.1.3 Moderator Temperature Coefficient (MTC)
A10

SL 2.1.1 ~~Reactor Core Safety Limits~~

LCO

3.1.~~3.5~~ Shutdown ~~Rod~~ Bank Insertion Limits

3.1.~~3.6~~ Control ~~Rod~~ Bank Insertion Limits

3.2.~~1~~ 3 Axial Flux Difference-Relaxed Axial Offset Control

3.2.~~2~~ 1 Heat Flux Hot Channel Factor-$F_Q(Z)$

3.2.~~3~~ 2 Nuclear Enthalpy Rise Hot Channel Factor-$F^N_{\Delta H}$

LCO 3.4.1 ~~3.2.5~~ ~~DNB Parameters~~ RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits

3.3.1~~.1~~ Reactor Trip System Instrumentation - Overtemperature and Overpower ΔT ~~setpoint~~ Allowable Value parameter values

LCO 3.9.1 Boron Concentration A10

b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:

WCAP-9272-P-A, "WESTINGHOUSE RELOAD SAFETY EVALUATION METHODOLOGY," July 1985 (Westinghouse Proprietary). LA4 COLR

REVISION 1 TO BEAVER VALLEY POWER STATION (BVPS) UNIT 1 AND UNIT 2 IMPROVED TECHNICAL SPECIFICATION (ITS) CONVERSION LICENSE AMENDMENT REQUEST (LAR) NOS. 296 (UNIT 1) AND 169 (UNIT 2)

CHANGE NO. 4

APPROVAL OF LAR NOS. 326 (UNIT 1) AND 177 (Unit 2)

LAR Nos. 326 and 177 proposed revisions to the Technical Specifications to incorporate the following: 1) Changes necessitated by the Unit No. 2 Surveillance Capsule W Overpressure Protection System (OPPS) Analysis, 2) Changes to incorporate an allowance, for both units, consistent with the Standard Technical Specifications (STS) for Westinghouse Plants, to have one residual heat removal (RHR) loop inoperable for surveillance testing, 3) Changes to achieve consistency between the two BVPS unit's affected Technical Specifications and with the STS, and 4) Administrative changes. LAR Nos. 326 and 177 were approved by the NRC in license amendment Nos. 265 (Unit 1) and 146 (Unit 2) issued March 11, 2005 (TAC Nos. MC3375 and MC3376). The BVPS ITS Conversion LAR submitted in February of 2005 anticipated the approval of LAR Nos. 326 and 177 and incorporated pages from these LARs marked as draft pages referencing the appropriate LAR number. Therefore, the enclosed current Technical Specification replacement pages are the same as the original pages with the exception that the "Draft" annotation is removed and the new amendment number (265 or 146 as appropriate) is included in the footer. Note that pages still affected by an outstanding LAR (i.e., draft pages) will not have an amendment number in the footer. Also, Section 3.4 pages 283 and 284 are changed because a pagination change anticipated in the ITS conversion submittal did not occur in the final amended pages. In addition, Amendments 265 and 146 included a Bases change not anticipated in the ITS Bases. This Bases change is incorporated in the insert at the top of the affected Bases page (page No. 159). Each of the following replacement pages is also annotated at the top to identify the page as Revision 1 to the February 28, 2005 (date of NRC receipt) submittal.

NOTE: ALL PAGE NUMBERS ARE REFERENCED FROM THE LOWER RIGHT CORNER PAGE NUMBER ANNOTATED IN BOLD TEXT.

SECTION 3.4 REPLACEMENT PAGES

159	231	244
226	232	282
228	234	283
229	235	284

SECTION 3.5 REPLACEMENT PAGES

80
83
87
88

from CTS 3.5.3

by such means as isolating the discharge of the pump by a closed valve that is tagged in the closed position.

SURVEILLANCE REQUIREMENTS (continued)

single action will not result in an injection into the RCS. This may be accomplished ~~through the pump control switch being placed in [pull to lock] and at least one valve in the discharge flow path being closed.~~

The Frequency of 12 hours is sufficient, considering other indications and alarms available to the operator in the control room, to verify the required status of the equipment.

1

~~[SR 3.4.12.4~~

~~Each required RHR suction relief valve shall be demonstrated OPERABLE by verifying its RHR suction valve and RHR suction isolation valves are open and by testing it in accordance with the Inservice Testing Program. (Refer to SR 3.4.12.7 for the RHR suction isolation valve Surveillance.) This Surveillance is only required to be performed if the RHR suction relief valve is being used to meet this LCO.~~

~~The RHR suction valve is verified to be opened every 12 hours. The Frequency is considered adequate in view of other administrative controls such as valve status indications available to the operator in the control room that verify the RHR suction valve remains open.~~

~~The ASME Code, Section XI (Ref. 8), test per Inservice Testing Program verifies OPERABILITY by proving proper relief valve mechanical motion and by measuring and, if required, adjusting the lift setpoint.]~~

1

SR 3.4.12.~~5~~ 3

The RCS vent of ≥ ~~[2.07] square inches~~ 2.07 square inches for Unit 1 or ≥ 3.14 square inches for Unit 2 is proven OPERABLE by verifying its open condition either:

a. Once every 12 hours for a vent valve that is not locked (valves that are sealed or secured in the open position are considered "locked" in this context) or

b. Once every 31 days for other vent path(s)). ~~(~~e.g., a vent valve that is locked, sealed, or secured in position ~~or a~~ removed pressurizer safety valve or open manway also fits this category~~).~~

NUREG-1431, Rev. 3

The passive vent path arrangement must only be open to be OPERABLE. This Surveillance is required to be met if the vent is being used to satisfy the pressure relief requirements of the LCO 3.4.12~~d~~ c.2

REACTOR COOLANT SYSTEM

ITS 3.4.5

Rev. 1 to 2/28/05 submittal

~~HOT STANDBY~~

RCS Loops - MODE 3

A1

LIMITING CONDITION FOR OPERATION

~~3.4.1.2~~ a. ~~At least~~ two reactor coolant loops and associated steam generators and reactor coolant pumps shall be in operation* when the rod control system is capable of control bank rod withdrawal.

Bases

LA1

b. ~~At least two reactor coolant loops~~ and associated steam generators and reactor coolant pumps ~~shall be OPERABLE and~~ one reactor coolant loop shall be in operation* when the rod control system is incapable of control bank rod withdrawal.

or

M1

Two RCS loops shall be OPERABLE and either:

APPLICABILITY: MODE 3~~**~~

M2

A2

with rod control system capable of rod withdrawal

ACTION:

inoperable

One

Cond. A & B ~~a.~~ ~~With less than the above~~ required reactor coolant loop~~s~~ ~~OPERABLE~~, restore the required loop~~s~~ to OPERABLE status within 72 hours or be in HOT SHUTDOWN within the next 12 hours.

within one hour

One required

or restore required RCS loop to operation

not

A3

L1

A4

Cond. C ~~b.~~ ~~With less than two~~ reactor coolant loop~~s~~ in operation, ~~immediately deenergize all control rod drive mechanisms, or~~ align the rod control system so that it is incapable of control bank rod withdrawal.

or two required RCS loops inoperable

M2

Cond. D ~~c.~~ With no reactor coolant loop in operation, suspend all operations ~~involving a reduction in boron concentration of the Reactor Coolant System~~ and immediately initiate corrective action to return the required reactor coolant loop to operation.

L2

Moved to Note in LCO

M2

operable status and

that would cause introduction into the RCS, coolant with boron concentration less than required to meet SDM of LCO 3.1.1 immediately

* All reactor coolant pumps may be removed from operation for ≤ 1 hour per 8 hour period provided: 1) no operations are permitted that would cause introduction into the Reactor Coolant System, coolant with boron concentration less than required to meet the SHUTDOWN MARGIN requirements of Specification 3.1.1.1 ~~for Mode 3~~; and 2) core outlet temperature is maintained at least 10°F below saturation temperature.

~~** See Special Test Exception 3.10.4.~~

A6

and place the rod control system in a condition incapable of rod withdrawal immediately.

A7

NOTE: CTS 3.4.1.3 is marked-up 3 times. Once each for corresponding ISTS 3.4.6, 3.4.7, and 3.4.8.

Rev. 1 to 2/28/05 submittal

REACTOR COOLANT SYSTEM

~~SHUTDOWN~~ A2 **ITS 3.4.6 RCS Loops - MODE 4** A1

LIMITING CONDITION FOR OPERATION

~~3.4.1.3~~ LA1

~~a. At least two of the coolant loops listed below shall be OPERABLE (1).~~

~~1. Reactor Coolant Loop (A) and its associated steam generator and reactor coolant pump, (2)~~

~~2. Reactor Coolant Loop (B) and its associated steam generator and reactor coolant pump, (2)~~

~~3. Reactor Coolant Loop (C) and its associated steam generator and reactor coolant pump, (2)~~

~~4. Residual Heat Removal Pump (A) and the (A) RHR heat exchanger, (3)~~

~~5. Residual Heat Removal Pump (B) and the (B) RHR heat exchanger. (3)~~

~~b. At least one of the above coolant loops shall be in operation. (4)~~

Two loops consisting of any combination of RCS loops and residual heat removal (RHR) loops shall be OPERABLE, and one loop shall be in operation.

APPLICABILITY: MODES 4 ~~and 5~~. A2

Moved to ITS 3.4.7 & 3.4.8 (Mode 5 Tech Specs)

(1) In MODE 5, one RHR loop may be inoperable for ≤ 2 hours for surveillance testing provided that the other RHR loop is OPERABLE and in operation.

LCO Note 2

~~(2)~~ The first reactor coolant pump in a non-isolated loop shall not be started with one or more non-isolated RCS cold leg temperatures less than or equal to the enable temperature specified in the PTLR, unless the secondary side water temperature of each steam generator in a non-isolated loop is less than 50°F above each of the non-isolated RCS cold leg temperatures.

A3

~~(3) The normal or emergency power source may be inoperable in MODE 5.~~

LCO Note 1

~~(4)~~ All reactor coolant pumps and Residual Heat Removal pumps may be removed from operation for ≤ 1 hour per 8 hour period provided: 1) no operations are permitted that would cause introduction into the Reactor Coolant System, coolant with boron concentration less than required to meet the SHUTDOWN MARGIN requirements of Specification 3.1.1~~.1 for Mode 4 or Specification 3.1.1.2 for Mode 5~~; and 2) core outlet temperature is maintained at least 10°F below saturation temperature.

A4

ITS 3.4.6 RCS Loops - MODE 4

Rev. 1 to 2/28/05 submittal

REACTOR COOLANT SYSTEM

LIMITING CONDITION FOR OPERATION

Note: Only required if RHR loop is operable.

M1

ACTION:

L1 24

a. ~~With less than the above required loops OPERABLE~~, immediately initiate corrective action to return the required loops to OPERABLE status as soon as possible; be in COLD SHUTDOWN within ~~20~~ hours.

One required loop inoperable

L1

or two required loops inoperable

L2

Insert 1

b. With no coolant loop in operation, suspend all operations ~~involving a reduction in boron concentration of the Reactor Coolant System~~ and immediately initiate corrective action to return the required coolant loop to operation.

M1

and OPERABLE status.

L3

SURVEILLANCE REQUIREMENTS

~~4.4.1.3.1 The required residual heat removal loop(s) shall be determined OPERABLE per Specification 4.0.5.~~

~~4.4.1.3.2~~ The required reactor coolant pump(s), if not in operation, shall be determined to be OPERABLE once per 7 days by verifying correct breaker alignments and indicated power availability.

SR 3.4.6.3

~~4.4.1.3.3~~ The required steam generator(s) shall be determined OPERABLE by verifying secondary side level greater than or equal to 15.5 percent narrow range at least once per 12 hours.

Bases

~~4.4.1.3.4~~ At least one coolant loop shall be verified to be in operation and circulating reactor coolant at least once per 12 hours.

SR 3.4.6.2

SR 3.4.6.1

Bases

LA2

NOTE

Not required to be performed until 7 days after a required pump is removed from operation.

L4

NOTE: CTS 3.4.1.3 is marked-up 3 times. Once each for corresponding ISTS 3.4.6, 3.4.7, and 3.4.8.

Rev. 1 to 2/28/05 submittal

REACTOR COOLANT SYSTEM

ITS 3.4.7 RCS Loops - MODE 5 Loops Filled

A1

SHUTDOWN A2

LI One RHR loop FOR OPERATION

and in operation, and either:

~~3.4.1.3 a. At least two of the coolant loops listed below~~ shall be OPERABLE~~(1)~~.

The non-operating RHR loop shall be Operable or

M1

L1

The secondary side water level of one steam generator shall be ≥ 28% (Unit 1) 15.5% (Unit 2).

LA1

Bases

~~1. Reactor Coolant Loop (A) and its associated steam generator and reactor coolant pump,(2)~~

~~2. Reactor Coolant Loop (B) and its associated steam generator and reactor coolant pump,(2)~~

~~3. Reactor Coolant Loop (C) and its associated steam generator and reactor coolant pump,(2)~~

~~4. Residual Heat Removal Pump (A) and the (A) RHR heat exchanger,(3)~~

~~5. Residual Heat Removal Pump (B) and the (B) RHR heat exchanger.(3)~~

~~b. At least one of the above coolant loops shall be in operation(4)~~

APPLICABILITY: MODES ~~4 and~~ 5.

with one or more RCS Loops unisolated and filled.

A2

LCO Note 2

~~(1)~~ ~~In MODE 5,~~ one RHR loop may be inoperable for ≤ 2 hours for surveillance testing provided that the other RHR loop is OPERABLE and in operation.

LCO Note 3

~~(2)~~ The first reactor coolant pump in a non-isolated loop shall not be started with one or more non-isolated RCS cold leg temperatures less than or equal to the enable temperature specified in the PTLR, unless the secondary side water temperature of each steam generator in a non-isolated loop is less than 50°F above each of the non-isolated RCS cold leg temperatures.

~~(3) The normal or emergency power source may be inoperable in MODE 5.~~

A6

LCO Note 1

~~(4)~~ All reactor coolant pumps and Residual Heat Removal pumps may be removed from operation for ≤ 1 hour per 8 hour period provided: 1) no operations are permitted that would cause introduction into the Reactor Coolant System, coolant with boron concentration less than required to meet the SHUTDOWN MARGIN requirements of Specification 3.1.1~~.1 for Mode 4 or Specification 3.1.1.2 for Mode 5~~; and 2) core outlet temperature is maintained at least 10°F below saturation temperature.

A7

Insert LCO Note 4

A5

ITS 3.4.7 RCS Loops - MODE 5
Loops Filled

Rev. 1 to 2/28/05 submittal

A4

LIMITING CONDITION FOR OPERATION

ACTION:

ITS 3.4.7 Action Conditions A & B

A3

~~a.~~ With less than the above required loops OPERABLE, immediately initiate corrective action to return the required loops to OPERABLE status ~~as soon as possible; be in COLD SHUTDOWN within 20 hours.~~

or no required RHR loops operable

M1 RHR

~~b.~~ With no ~~coolant~~ loop in operation, suspend all operations ~~involving a reduction in boron concentration of the Reactor Coolant System~~ and immediately initiate corrective action to return the required ~~coolant~~ loop to operation.

Condition C

L2 Insert 1

M1 RHR

and operable status

SURVEILLANCE REQUIREMENTS

~~4.4.1.3.1 The required residual heat removal loop(s) shall be determined OPERABLE per Specification 4.0.5.~~

L4

SR 3.4.7.3 ~~4.4.1.3.2~~ The required reactor coolant pump(s), if not in operation, shall be determined to be OPERABLE once per 7 days by verifying correct breaker alignments and indicated power availability.

Bases LA2

SR 3.4.7.2 ~~4.4.1.3.3~~ The required steam generator(s) shall be determined OPERABLE by verifying secondary side level greater than or equal to 15.5 percent narrow range at least once per 12 hours.

RHR M1

SR 3.4.7.1 ~~4.4.1.3.4~~ At least one ~~coolant~~ loop shall be verified to be in operation and circulating reactor coolant at least once per 12 hours.

Bases LA2

NOTE
Not required to be performed until 7 days after a required pump is removed from operation.

L5

NOTE: CTS 3.4.1.3 is marked-up 3 times. Once each for corresponding ISTS 3.4.6, 3.4.7, and 3.4.8.

Rev. 1 to 2/28/05 submittal

~~SHUTDOWN~~ A2 **ITS 3.4.8 RCS Loops - Mode 5 Loops Not Filled**

A1

LIMITING CONDITION FOR OPERATION

~~3.4.1.3~~ ~~a.~~ ~~At least two of the coolant loops listed below shall be OPERABLE (1).~~

A3

~~1. Reactor Coolant Loop (A) and its associated steam generator and reactor coolant pump, (2)~~

~~2. Reactor Coolant Loop (B) and its associated steam generator and reactor coolant pump, (2)~~

~~3. Reactor Coolant Loop (C) and its associated steam generator and reactor coolant pump, (2)~~

LA1 Bases

Both RHR loops shall be OPERABLE and

4. Residual Heat Removal Pump (A) and the (A) RHR heat exchanger, ~~(3)~~

5. Residual Heat Removal Pump (B) and the (B) RHR heat exchanger. ~~(3)~~

~~b.~~ ~~At least~~ one ~~of the above coolant~~ RHR loops shall be in operation. ~~(4)~~

A3

APPLICABILITY: MODES ~~4 and~~ 5 with all RCS loops isolated or with unisolated RCS loops not filled.

~~(1)~~ In MODE 5, one RHR loop may be inoperable for ≤ 2 hours for surveillance testing provided that the other RHR loop is OPERABLE and in operation. LCO Note 2

A3

~~(2) The first reactor coolant pump in a non-isolated loop shall not be started with one or more non-isolated RCS cold leg temperatures less than or equal to the enable temperature specified in the PTLR, unless the secondary side water temperature of each steam generator in a non-isolated loop is less than 50°F above each of the non-isolated RCS cold leg temperatures.~~

A3 INSERT 2 M2

~~(3) The normal or emergency power source may be inoperable in MODE 5.~~ A5

~~(4)~~ All ~~reactor coolant pumps and~~ Residual Heat Removal pumps may be removed from operation for ≤ ~~1 hour per 8 hour period~~ provided: ~~1)~~ no operations are permitted that would cause introduction into the Reactor Coolant System, coolant with boron concentration less than required to meet the SHUTDOWN MARGIN requirements of Specification 3.1.1~~.1 for Mode 4 or Specification 3.1.1.2 for Mode 5~~; and ~~2)~~ core outlet temperature is maintained at least 10°F below saturation temperature. LCO Note 1 b. a.

INSERT 3 M2

ITS 3.4.8 RCS Loops - Mode 5
Loops Not Filled

Rev. 1 to 2/28/05 submittal

REACTOR COOLANT SYSTEM

LIMITING CONDITION FOR OPERATION

ACTION: one required RHR loop inoperable

A3

~~a.~~ With ~~less than the above required loops OPERABLE~~, immediately initiate corrective action to return the RHR required loops to OPERABLE status as soon as possible; ~~be in COLD SHUTDOWN within 20 hours~~. or no required RHR loop operable

L1

INSERT 1

~~b.~~ With no ~~coolant~~ loop in operation, suspend all operations ~~involving a reduction in boron concentration of the Reactor Coolant System~~ and immediately initiate corrective action to return the required ~~coolant~~ RHR loop to operation and operable status.

M1

L3

SURVEILLANCE REQUIREMENTS

~~4.4.1.3.1 The required residual heat removal loop(s) shall be determined OPERABLE per Specification 4.0.5.~~

~~4.4.1.3.2~~ SR 3.4.8.2 The required ~~reactor coolant~~ RHR pump(s), if not in operation, shall be determined to be OPERABLE once per 7 days by verifying correct breaker alignments and indicated power ~~availability~~.

A3

~~4.4.1.3.3 The required steam generator(s) shall be determined OPERABLE by verifying secondary side level greater than or equal to 15.5 percent narrow range at least once per 12 hours.~~

~~4.4.1.3.4~~ SR 3.4.8.1 At least one ~~coolant~~ RHR loop shall be verified to be in operation and circulating reactor coolant at least once per 12 hours.

Bases LA2 A3

NOTE
Not required to be performed until 7 days after a required pump is removed from operation.

L4

Draft Page From Unit 2 LAR # 173

Rev. 1 to 2/28/05 submittal

~~3/4.4.3~~ Pressurizer SAFETY VALVES

ITS 3.4.10

A1

LIMITING CONDITION FOR OPERATION

~~3.4.3~~ All pressurizer ~~code safety~~ valves shall be OPERABLE with a lift setting* of ~~2485 psig + 1.6% - 3%~~ ≥ 2410.5 psig and ≤ 2524.7 psig ~~**~~

APPLICABILITY: MODES 1, 2, and 3,
Mode 4 with all RCS cold leg temperatures > the enable temperature specified in the PTLR.

L1 INSERT 1

ACTION:

L2 24

M1

a. With one pressurizer code safety valve inoperable, either restore the inoperable valve to OPERABLE status within 15 minutes ~~or~~ be in Mode 3 in 6 hours and be in HOT SHUTDOWN with any RCS cold leg temperature ≤ the enable temperature specified in the PTLR ~~and apply RCS overpressure protection requirements in accordance with Specification 3.4.9.3~~ within ~~12~~ 24 hours.

A2

~~b. After any pressurizer code safety valve lift, as indicated by the safety valve position indicator, involving loop seal or water discharge; be in at least HOT STANDBY within the next 6 hours, and in HOT SHUTDOWN with any RCS cold leg temperature ≤ the enable temperature specified in the PTLR and apply RCS overpressure protection requirements in accordance with Specification 3.4.9.3 within the following 6 hours.~~

A3 LRM LA2 A4 INSERT 2

SURVEILLANCE REQUIREMENTS

~~4.4.3 No additional requirements other than those required by Specification 4.0.5.~~

SR 3.4.10.1	Verify each pressurizer safety valve is OPERABLE in accordance with the Inservice Testing Program. Following testing, lift settings shall be within ± 1%.	In accordance with the Inservice Testing Program

~~*~~ The lift setting shall correspond to ambient conditions of the valve at nominal operating temperature and pressure.

~~**~~ Within ± 1% following pressurizer code safety valve testing.

SR 3.4.10.1

LA1 Bases

Rev. 1 to 2/28/05 submittal

ITS 3.4.12

OVERPRESSURE PROTECTION SYSTEMS

A1

LIMITING CONDITION FOR OPERATION

LA1

~~3.4.9.3~~ An overpressure protection system shall be OPERABLE with a maximum of one charging pump~~(1)~~ capable of injecting into the RCS and the accumulators isolated~~(2)~~ and either a or b below:

PTLR

a. Two power-operated relief valves (PORVs) with nominal maximum lift settings which vary with the RCS temperature and ~~which~~ lift settings that do not exceed the limits specified in the PTLR, or

b. The RCS depressurized and an RCS vent of greater than or equal to 3.14 square inches.

APPLICABILITY: MODE 4 when any RCS cold leg temperature is less than or equal to an enable temperature specified in the PTLR, MODE 5, MODE 6 when the reactor vessel head is on.

ACTION:

------------------------------~~GENERAL~~ NOTE------------------------------

Specification 3.0.4.b is not applicable when entering MODE 4 or MODE 5.

ITS Cond. A

~~a.~~ With two or more charging pumps capable of injecting into the RCS, immediately initiate action to verify a maximum of one charging pump is capable of injecting into the RCS ~~or depressurize and vent the RCS through a 3.14 square inch or larger vent within 12 hours.~~

L1

ITS Cond. B & C

~~b.~~ With an accumulator not isolated when the accumulator pressure is greater than or equal to the maximum RCS pressure for the existing RCS cold leg temperature allowed by the heatup and cooldown curves in the PTLR, isolate the affected accumulator within 1 hour or increase the RCS cold

LCO Notes

(1) Two charging pumps may be capable of injecting into the RCS for pump swap operation for less than or equal to 1 hour.

(2) Accumulator isolation with power removed from the discharge isolation valves is only required when the accumulator pressure is greater than or equal to the maximum RCS pressure for the existing RCS cold leg temperature allowed by the heatup and cooldown curves provided in the PTLR.

Bases

LA2

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

ITS Cond. B & C

leg temperature above the enable temperature specified in the PTLR within the next 12 hours or depressurize the affected accumulator to less than the maximum RCS pressure for the existing cold leg temperature allowed by the heatup and cooldown curves in the PTLR within the next 12 hours.

~~c.~~ ITS Cond. D & G

With one PORV inoperable in MODE 4 (when any RCS cold leg temperature is less than or equal to the enable temperature specified in the PTLR), restore the inoperable PORV to OPERABLE status within 7 days or depressurize and vent the RCS through a 3.14 square inch or larger vent within the next 12 hours.

~~d.~~ ITS Cond. E & G

With one PORV inoperable in MODES 5 or 6, restore the inoperable PORV to OPERABLE status within 24 hours or depressurize and vent the RCS through a 3.14 square inch or larger vent within the next 12 hours.

~~e.~~ ITS Cond. G

With two PORVs inoperable, depressurize and vent the RCS through a 3.14 square inch or larger vent within 12 hours.

SURVEILLANCE REQUIREMENTS

~~4.4.9.3.1~~ Verify at least once per 12 hours that:

SR 3.4.12.1 ~~a.~~ A maximum of one charging pump is capable of injecting into the RCS, and

SR 3.4.12.2 ~~b.~~ Each accumulator is isolated; however, with the accumulator pressure less than the low temperature overpressure protection setpoint, the accumulator discharge isolation valves may be opened to perform accumulator discharge check valve testing.

LCO Note

Bases

LA3

~~4.4.9.3.2 When PORVs are being used for overpressure protection, demonstrate each PORV is OPERABLE by:~~

SR 3.4.12.4 ~~a.~~ Verifying each PORV block valve is open for each required PORV at least once per 72 hours, and

Rev. 1 to 2/28/05 submittal

Note: Not required to be performed until 12 hours after decreasing RCS cold leg temperature to ≤ the enable temperature in the PTLR.

SURVEILLANCE REQUIREMENTS (Continued)

COT A2 L2

SR 3.4.12.6 ~~b.~~ Performance of a ~~CHANNEL FUNCTIONAL TEST~~ on the PORV actuation channel, but excluding valve operation, ~~within 31 days prior to entering a condition in which the~~ PORV is required to be ~~OPERABLE and placed~~ in operation after decreasing the ~~RCS cold~~ leg ~~temperature~~ to less than or ~~equal to the~~ enable temperature specified in ~~the PTLR and~~ at least once per 31 days, and

SR 3.4.12.7 ~~c.~~ Performance of a CHANNEL CALIBRATION on each required PORV actuation channel at least once per 18 months.

~~4.4.9.3.3~~ When a vent is ~~being used~~ for overpressure protection, verify the ~~required~~ vent is open:

required L3

SR 3.4.12.3 ~~a.~~ At least once per 12 hours for an open vent or unlocked open vent valve(s), except

~~b.~~ At least once per 31 days for a valve which is locked, ~~or provided with remote position indication~~, or sealed, or otherwise secured in the open position.

M1

BASES LA4 for other vent path(s)

Rev. 1 to 2/28/05 submittal

EMERGENCY CORE COOLING SYSTEMS A1

ITS 3.5.2

3/4.5.2 ECCS SUBSYSTEMS - $T_{avg} \geq 350°F$

LIMITING CONDITION FOR OPERATION LA7

trains

3.5.2 Two ~~separate and independent~~ ECCS ~~subsystems~~ shall be OPERABLE~~(1)~~ with each subsystem comprised of: Bases

Insert 2 ITS LCO Note 1

L3 LA1

~~a.~~ One OPERABLE ~~centrifugal~~ charging pump,

~~b.~~ One OPERABLE low head safety injection pump,

~~c.~~ One OPERABLE recirculation spray pump~~(2)~~ capable of supplying the safety injection flow path during recirculation phase, and

~~d.~~ An OPERABLE flow path capable of taking suction from the refueling water storage tank on a safety injection signal and transferring suction to the containment sump during the recirculation phase of operation.

APPLICABILITY: MODES 1, 2 and 3. M1

ACTION: L1 or more train(s) trains 6 In MODE 3 in 6 hours and MODE 4

COND A COND B

~~a.~~ With one ECCS ~~subsystem~~ inoperable, restore the inoperable ~~subsystem~~ to OPERABLE status within 72 hours or be in ~~HOT SHUTDOWN~~ within the next ~~12~~ hours.

L1 L2 Insert 1 COND C

~~b.~~ ~~In the event the ECCS is actuated and injects water into the Reactor Coolant System, a Special Report shall be prepared and submitted in accordance with 10 CFR 50.4 within 30 days describing the circumstances of the actuation and the total accumulated actuation cycles to date.~~

SURVEILLANCE REQUIREMENTS

~~4.5.2~~ Each ECCS subsystem shall be demonstrated OPERABLE: removed

SR 3.5.2.1 ~~a.1.~~ At least once per 12 hours by verifying that the following valves are in the indicated positions ~~with power to the valve operator control circuits~~ disconnected by removal of the plug in the lock out circuit from each circuit: Bases LA2

LCO 3.4.12, "Overpressure Protection Systems (OPPS)"

ITS LCO Note 2

~~(1)~~ In MODE 3 one of the required ~~centrifugal~~ charging pumps may be made incapable of injecting to support transition into or from the Applicability of ~~Specification 3.4.9.3~~ for up to 4 hours or until the temperature of all RCS cold legs exceeds the OPPS enable temperature specified in the PTLR plus 25°F, whichever comes first.

~~(2)~~ Recirculation spray pump 2RSS-P21C or 2RSS-P21D. Bases LA1

Changes to this Unit 1 material are addressed in the Markup and DOCs associated with the corresponding Unit 2 text.

Rev. 1 to 2/28/05 submittal

ITS 3.5.2

Draft Page from Unit 1 LAR # 302

Unit 1

EMERGENCY CORE COOLING SYSTEMS

3/4.5.2 ECCS SUBSYSTEMS - $T_{avg} \geq 350°F$ (U1)

LIMITING CONDITION FOR OPERATION A1 LA1

Bases

~~3.5.2 Two separate and independent ECCS subsystems shall be OPERABLE~~ (1) ~~(2)~~ ~~with each subsystem comprised of:~~

~~a.~~ One OPERABLE ~~centrifugal~~ charging pump,

~~b.~~ One OPERABLE low head safety injection pump, and

~~c.~~ An OPERABLE flow path capable of taking suction from the refueling water storage tank on a safety injection signal and transferring suction to the containment sump during the recirculation phase of operation.

~~APPLICABILITY: MODES 1, 2 and 3.~~

~~ACTION:~~

~~a. With one ECCS subsystem inoperable, restore the inoperable sub... be in HOT SHU...~~

Changes to this Unit 1 material are addressed in the Markup and DOCs associated with the corresponding Unit 2 text.

~~b. In the event the ECCS is actuated and injects water into the Reactor Coolant System, a Special Report shall be prepared and submitted in accordance with 10 CFR 50.4 within 30 days describing the circumstances of the actuation and the total accumulated actuation cycles to date.~~

Changes to this Unit 1 material are addressed in the Markup and DOCs associated with the corresponding Unit 2 text.

~~(1) In MODE 3 one of the required centrifugal charging pumps may be made incapable of injecting to support transition into or from the Applicability of Specification 3.4.9.3 for up to 4 hours or until the temperature of all RCS cold legs exceeds the OPPS enable temperature specified in the PTLR plus 25°F, whichever comes first.~~

~~(2)~~ In MODE 3, the ECCS automatic HHSI flow path may be isolated to support transition into or from the Applicability of ~~Specification 3.5.4~~ for up to 4 hours or until the temperature of all RCS cold legs exceeds the OPPS enable temperature specified in the PTLR plus 25°F, whichever comes first.

LCO 3.4.12, "Overpressure Protection Systems (OPPS)"

ITS 3.5.2 Unit 1 Specific LCO Note 3

ECCS SUBSYSTEMS - T_{avg} < 350°F

LIMITING CONDITION FOR OPERATION A1

3.5.3 As a minimum, one ECCS train ~~subsystem comprised of the following~~ shall be OPERABLE: Bases

LA1

a. One OPERABLE ~~centrifugal~~ charging pump,

b. One OPERABLE Low Head Safety Injection Pump, and

c. One OPERABLE recirculation spray pump* capable of supplying the safety injection flow path during recirculation phase, and

d. An OPERABLE flow path capable of taking suction from the refueling water storage tank upon being manually realigned and transferring suction to the containment sump during the recirculation phase of operation.

APPLICABILITY: MODE 4.

ACTION:

A2 high head subsystem

------------------------------GENERAL NOTE------------------------------

Specification 3.0.4.b is not applicable to ECCS ~~centrifugal charging pumps~~.

MODE 5 train L1 24 L3

COND A COND B ~~a.~~ With no ECCS train ~~subsystem~~ OPERABLE ~~because of the inoperability of either the centrifugal charging pump or the flow path from the refueling water storage tank,~~ restore at least one ECCS train ~~subsystem~~ to OPERABLE status within 1 hour or be in MODE 5 ~~COLD SHUTDOWN~~ within the next 24 ~~20~~ hours.

L2 ~~b. In the event the ECCS is actuated and injects water into the Reactor Coolant System, a Special Report shall be prepared and submitted in accordance with 10 CFR 50.4 within 30 days describing the circumstances of the actuation and the total accumulated actuation cycle to date.~~

SURVEILLANCE REQUIREMENTS train A3 SR 3.5.2.1, SR 3.5.2.2, SR 3.5.2.4, SR 3.5.2.7

SR 3.5.3.1 ~~4.5.3.1~~ The ECCS train ~~subsystem~~ shall be demonstrated OPERABLE per SR 3.5.2.1, SR 3.5.2.2, SR 3.5.2.4, SR 3.5.2.7 ~~the applicable Surveillance Requirements of 4.5.2.~~

Bases LA1

* Recirculation spray pump 2RSS-P21C or 2RSS-P21D.

Changes to this Unit 1 material are addressed in the Markup and DOCs associated with the corresponding Unit 2 text.

ITS 3.5.3

Rev. 1 to 2/28/05 submittal

ECCS SUBSYSTEMS - T_{avg} < 350°F (U1)

A1

Unit 1

Draft Page from Unit 1 LAR # 302

LIMITING CONDITION FOR OPERATION

~~3.5.3 As a minimum, one ECCS subsystem comprised of the following shall be OPERABLE:~~

a. One OPERABLE ~~centrifugal~~ charging pump,

b. One OPERABLE Low Head Safety Injection Pump, and

Bases

LA1

c. An OPERABLE flow path capable of taking suction from the refueling water storage tank upon being manually realigned and transferring suction to the containment sump during the recirculation phase of operation.

~~APPLICABILITY: MODE 4.~~

~~ACTION:~~

~~-------------------------------GENERAL NOTE-------------------------------~~

~~Specification 3.0.4.b is not applicable to ECCS centrifugal charging pumps.~~

~~---~~

~~a. With no ECCS subsystem OPERABLE because of the inoperability of either the centrifugal charging pump or the flow path from the refueling water storage tank, restore at ... within 1 ho... urs.~~

Changes to this Unit 1 material are addressed in the Markup and DOCs associated with the corresponding Unit 2 text.

~~b. In the event the ECCS is actuated and injects water into the Reactor Coolant System, a Special Report shall be prepared and submitted in accordance with 10 CFR 50.4 within 30 days describing the circumstances of the actuation and the total accumulated actuation cycle to date.~~

SURVEILLANCE REQUIREMENTS

train

~~4.5.3.1~~ The ECCS ~~subsystem~~ shall be demonstrated OPERABLE by the performance of ~~each of the~~ Surveillance Requirements ~~of 4.5.2 except for requirements 4.5.2.c, 4.5.2.f.2 and 4.5.2.f.3~~.

SR 3.5.3.1

A4

SR 3.5.2.1, SR 3.5.2.2, SR 3.5.2.4, SR 3.5.2.7.

**REVISION 1 TO BEAVER VALLEY POWER STATION (BVPS) UNIT 1 AND UNIT 2
IMPROVED TECHNICAL SPECIFICATION (ITS) CONVERSION
LICENSE AMENDMENT REQUEST (LAR) NOS. 296 (UNIT 1) AND 169 (UNIT 2)**

CHANGE NO. 5

APPROVAL OF LAR NOS. 309 (UNIT 1) AND 181 (Unit 2)

The changes proposed in LAR Nos. 309 and 181 increase the surveillance test interval from monthly to quarterly for certain reactor trip system and engineered safety feature actuation system channel functional tests. The proposed changes are based on the methodology described in WCAP-10271, "Evaluation of Surveillance Frequencies and Out of Service Times for the Reactor Protection Instrumentation System," and supplements thereto. LAR Nos. 309 and 181 were approved by the NRC in license amendment Nos. 267 (Unit 1) and 149 (Unit 2) issued September 19, 2005 (TAC Nos. MC3404 and MC3405). The BVPS ITS Conversion LAR submitted in February of 2005 anticipated the approval of LAR Nos. 309 and 181 and incorporated pages from these LARs marked as draft pages referencing the appropriate LAR number. Therefore, the enclosed replacement pages are the same as the original pages with the exception that the "Draft" annotation is removed and the new amendment number (267 or 149 as appropriate) is included in the footer. Note that pages still affected by an outstanding LAR (i.e., draft pages) will not have an amendment number in the footer. Each of the following replacement pages is also annotated at the top to identify the page as Revision 1 to the February 28, 2005 (date of NRC receipt) submittal.

NOTE: ALL PAGE NUMBERS ARE REFERENCED FROM THE LOWER RIGHT CORNER PAGE NUMBER ANNOTATED IN BOLD TEXT.

SECTION 3.3A REPLACEMENT PAGES

114

127

SECTION 3.3C REPLACEMENT PAGES

98

101

102

113

115

116

A30

A28

A29

CHANNEL OPERATIONAL TEST (COT) OR TRIP ACTUATING DEVICE OPERATIONAL TEST (TADOT) OR ACTUATION LOGIC TEST

Rev. 1 to 2/28/05 submittal

A28

Changes to Modes are addressed in markup of Table 3.3-1

ITS SR 3.3.1.14 Verify RTS Response Time is within limits.

Changes to Functions are addressed in markup of Table 3.3-1

~~TABLE 4.3-1 (Co~~

~~REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS~~

Functional Unit	Channel Check	Channel Calibration	~~Channel Functional Test~~	~~Modes in Which Surveillance Required~~
~~12. Loss of Flow - Single Loop (Above P-8)~~	~~S~~	~~R~~	~~Q~~	~~1~~
13. Loss of Flow - Two Loop (Above P-7 ~~and Below P-8)~~	~~S~~ SR 3.3.1.1	~~R~~ SR 3.3.1.10	~~Q~~ SR 3.3.1.6	1
14. Steam/Generator Water Level-Low-Low	~~S~~	~~R~~	~~Q~~	1, 2
15. DELETED.				
16. Undervoltage-Reactor Coolant Pumps (Above P-7)	N.A.	~~R~~ SR 3.3.1.10	~~Q~~ SR 3.3.1.8 L25	1
17. Underfrequency-Reactor Coolant Pumps (Above P-7)	N.A.	~~R~~	~~Q~~	1
18. Turbine Trip (Above P-9)				
A. Emergency Trip Header Low Pressure	N.A.	~~R~~ SR 3.3.1.10	~~S/U(1)~~ SR 3.3.1.13 L26	1, ~~2~~ L21
B. Turbine Stop Valve Closure	N.A.	R	~~S/U(1)~~	1, ~~2~~
19. Safety Injection Input from ESF	N.A.	N.A.	~~R~~ SR 3.3.1.12 A31	~~1, 2~~
20. Reactor Coolant Pump Breaker Position Trip (Above P-7)	N.A.	N.A.	~~R~~	N.A.
21. Reactor Trip Breaker	N.A.	N.A.	SR 3.3.1.4 M~~(5,~~ 11) ~~and S/U(1)~~ L27	Bases LA8 ~~1, 2, 3(14), 4(14), 5(14)~~

Changes to this Unit 1 material are addressed in the Unit 2 markup.

Rev. 1 to 2/28/05 submittal

TABLE 4.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

	Functional Unit	Channel Check	Channel Calibration	Channel Functional Test	Modes in Which Surveillance Required
12.	Loss of Flow - Single Loop	S	R	Q	1
13.	Loss of Flow - Two Loops	S	R	Q	1
14.	Steam/Generator Water Level-Low-Low	S	R	Q	1, 2
15.	DELETED				
16.	Undervoltage-Reactor Coolant Pumps	N.A.	R	Q	1
17.	Underfrequency-Reactor Coolant Pumps	N.A.	R	Q	1
18.	Turbine Trip				
	a. Auto Stop Oil Pressure	N.A.	~~N.A.~~ SR 3.3.1.10	S/U(1)	1, 2
	b. Turbine Stop Valve Closure	N.A.	~~N.A.~~ SR 3.3.1.10	S/U(1)	1, 2
19.	Safety Injection Input from ESF	N.A.	N.A.	R	1, 2
20.	Reactor Coolant Pump Breaker Position Trip	N.A.	N.A.	R	N.A.
21.	Reactor Trip Breaker	N.A.	N.A.	M(5,11) and S/U(1)	1, 2, 3(14), 4(14), 5(14)

M16

Changes to this Unit 1 material are addressed in the Unit 2 markup.

Rev. 1 to 2/28/05 submittal

ITS SR 3.3.2.9 Verify ESFAS Response Times are within Limit. A19

Channel Operational Test (COT), Trip Actuating Device Operational Test TADOT), Actuation Logic Test, Master Relay Test, and Slave Relay Test A18

Changes to Functions are addressed in markup of Table 3.3-3 A17

Changes to Modes are addressed in markup of Table 3.3-3 A17

TABLE 4.3-2

~~ENG ING SAFETY FEATURE ACTUATION SYSTEM INSTR AT~~
~~SURVEILLANCE REQUIREMENTS~~

~~FUNCTIONAL UNIT~~	CHANNEL CHECK	CHANNEL CALIBRATION	~~CHANNEL FUNCTIONAL TEST~~	~~MODES IN WHICH SURVEILLANCE REQUIRED~~
~~1. SAFETY INJECTION AND FEEDWATER ISOLATION~~		SR 3.3.2.2, SR 3.3.2.3, SR 3.3.2.6	SR 3.3.2.7	
~~a. Manual Initiation~~	N.A.	N.A.	~~R~~	~~1, 2, 3, 4~~
~~b. Automatic Actuation Logic and Actuation Relays~~	N.A.	N.A.	~~M(1)~~	~~1, 2, 3, 4~~
	SR 3.3.2.1	SR 3.3.2.8	SR 3.3.2.4	
~~c. Containment Pressure-High~~	~~S~~	R	Q	~~1, 2, 3~~
~~d. Pressurizer Pressure--Low~~	~~S~~	R	Q	1, 2, 3 (a)
~~e. Steam Line Pressure--Low~~	~~S~~	R	Q	1, 2, 3 (a)
~~1.1 SAFETY INJECTION-TRANSFER FROM INJECTION TO THE RECIRCULATION MODE~~			SR 3.3.2.2, SR 3.3.2.3	L11
~~a. Automatic Actuation Logic Coincident with Safety Injection Signal~~	N.A.	N.A.	~~M(1)~~	~~1, 2, 3, 4~~
			SR 3.3.2.4	
~~b. Refueling Water Storage Tank Level-Extreme Low~~	~~S~~	~~R~~	~~Q~~	~~1, 2, 3, 4~~

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

Rev. 1 to 2/28/05 submittal

ITS SR 3.3.2.9 Verify ESFAS Response Times are within Limit. (A19)

Channel Operational Test (COT), Trip Actuating Device Operational Test TADOT), Actuation Logic Test, Master Relay Test, and Slave Relay Test (A18)

Changes to Functions are addressed in markup of Table 3.3-3 (A17)

Changes to Modes are addressed in markup of Table 3.3-3 (A17)

~~TABLE 4.3-2 (Continued)~~

~~ENGINEERING SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS~~

Moved to ITS LCO 3.3.5. Changes to CTS Function 6 are addressed in the markups and DOCs associated with ITS LCO 3.3.5. (A7)

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	~~CHANNEL FUNCTIONAL TEST~~	~~MODES IN WHICH SURVEILLANCE REQUIRED~~
~~6. LOSS OF POWER~~				
~~a. 4.16kv Emergency Bus~~				
~~1. Undervoltage (Trip Feed)~~	~~N.A.~~	~~R~~	~~Q~~	~~1, 2, 3, 4~~
~~2. Undervoltage (Start Diesel)~~	~~N.A.~~	~~R~~	~~Q~~	~~1, 2, 3, 4~~
~~b. 4.16kv Emergency Bus (Degraded Voltage)~~	~~N.A.~~	~~R~~	~~Q~~	~~1, 2, 3, 4~~
~~c. 480v Emergency Bus (Degraded Voltage)~~	~~N.A.~~	~~R~~	~~Q~~	~~1, 2, 3, 4~~
~~7. AUXILIARY FEEDWATER[(4)]~~				
~~a. Automatic Actuation Logic and Actuation Relays~~	N.A.	N.A.	~~M[(1)]~~ SR 3.3.2.2, SR 3.3.2.3, SR 3.3.2.6	~~1, 2, 3~~
~~b. Steam Generator Water Level-Low-Low~~				
~~1. Start Turbine Driven Pump~~	~~S~~ SR 3.3.2.1	~~R~~ SR 3.3.2.8	~~Q~~ SR 3.3.2.4	~~1, 2, 3~~
~~2. Start Motor Driven Pumps~~	~~S~~	~~R~~	~~Q~~	~~1, 2, 3~~

(LA3)

(4) Manual initiation is included in Specification 3.7.1.2.

ITS SR 3.3.2.9 Verify ESFAS Response Times are within Limit.

A19

Channel Operational Test (COT), Trip Actuating Device Operational Test TADOT), Actuation Logic Test, Master Relay Test, and Slave Relay Test

Rev. 1 to 2/28/05 submittal

Changes to Functions are addressed in markup of Table 3.3-3

A17

~~ENGINEERING SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION~~
~~SURVEILLANCE REQUIREMENTS~~

A18

Changes to Modes are addressed in markup of Table 3.3-3

A17

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	~~CHANNEL FUNCTIONAL TEST~~	~~MODES IN WHICH SURVEILLANCE REQUIRED~~
7. AUXILIARY FEEDWATER (continued)				
c. Undervoltage - RCP (Start Turbine-Driven Pump)	~~S~~ L15	~~R~~ SR 3.3.2.8	~~Q~~ SR 3.3.2.5 L14	1, 2
d. Safety Injection (Start All Auxiliary Feedwater Pumps)	See 1 above (all SI surveillance requirements)			
e Trip of Main Feedwater Pumps (Start Motor-Driven Pumps)	N.A. M15	N.A.	~~R~~ SR 3.3.2.7	1, 2, 3
8. ENGINEERED SAFETY FEATURE INTERLOCKS				
a. Reactor Trip, P-4	N.A.	N.A.	~~R~~ SR 3.3.2.7	1, 2, 3
b. Pressurizer Pressure, P-11	~~N.A.~~ SR 3.3.2.1	~~R~~ SR 3.3.2.8	~~Q~~ SR 3.3.2.4	1, 2, 3
c. Low-Low T_{avg}, P-12	~~N.A.~~ SR 3.3.2.1	~~R~~ SR 3.3.2.8	~~Q~~ SR 3.3.2.4	1, 2, 3

Changes to this Unit 1 material are addressed in the Unit 2 markup.

DRAFT PAGE FROM UNIT 1 LAR # 317

Rev. 1 to 2/28/05 submittal

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

	FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1.1	SAFETY INJECTION-TRANSFER FROM INJECTION TO THE RECIRCULATION MODE				
	a. Manual Initiation	N.A.	N.A.	R	1, 2, 3, 4
	b. Automatic Actuation Logic Coincident with Safety Injection Signal	N.A.	N.A.	$M^{(1)}$	1, 2, 3 ,4
	c. Refueling Water Storage Tank Level-Low	S	R	Q	1, 2, 3 ,4
2.	CONTAINMENT SPRAY				
	a. Manual Initiation	N.A.	N.A.	R	1, 2, 3, 4
	b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	$M^{(1)}$	1, 2, 3, 4
	c. Containment Pressure-High-High	S	R	Q	1, 2, 3

L13

M10

M9

Changes to this Unit 1 material are addressed in the Unit 2 markup.

Changes to this Unit 1 material are addressed in the Unit 2 markup.

Rev. 1 to 2/28/05 submittal

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

L2

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
4. STEAM LINE ISOLATION				
a. ~~Manual~~	~~N.A.~~	~~N.A.~~	~~R~~	~~1, 2, 3~~
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	M(1)	1, 2, 3
c. Containment Pressure--Intermediate-High-High	S	R	Q	1, 2, 3
d. Steamline Pressure--Low	S	R	Q	1, 2, 3
e. Steamline Pressure Rate-High Negative	S	R	Q	1, 2, 3
5. TURBINE TRIP & FEEDWATER ISOLATION				
a. Steam Generator Water Level--High-High	S	R	Q	1, 2, 3
6. LOSS OF POWER				
a. 4.16kv Emergency Bus Under-voltage (Loss of Voltage) Trip Feed & Start Diesel	N.A.	R	Q	1, 2, 3, 4
b. 4.16kv and ~~480v~~ Emergency Bus Undervoltage (Degraded Voltage)	N.A.	R	Q	1, 2, 3, 4

M9

A7

Moved to ITS LCO 3.3.5. Changes to CTS Function 6 are addressed in the markups and DOCs associated with ITS LCO 3.3.5.

M11

Automatic Actuation Logic and Actuation Relays and Safety Injection

Changes to this Unit 1 material are addressed in the Unit 2 markup.

Rev. 1 to 2/28/05 submittal

Changes to this Unit 1 material are addressed in the Unit 2 markup.

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

Automatic Actuation Logic and Actuation Relays

M12

	FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
7.	AUXILIARY FEEDWATER				
	a. Steam Generator Water Level-Low-Low	S	R	Q	1, 2, 3
	b. Undervoltage-RCP	S	R	Q	1, 2
	c. S.I.	See 1 above (all SI surveillance requirements)			
	d. (Deleted)				
	e. Trip of Main Feedwater Pumps	N.A.	N.A.	R	1, 2, 3
8.	ESF INTERLOCKS				
	a. P-4	N.A.	N.A.	R	1, 2, 3
	b. P-11	N.A.	R	Q	1, 2, 3
	c. P-12	N.A.	R	Q	1, 2, 3

Changes to this Unit 1 material are addressed in the Unit 2 markup.

REVISION 1 TO BEAVER VALLEY POWER STATION (BVPS) UNIT 1 AND UNIT 2 IMPROVED TECHNICAL SPECIFICATION (ITS) CONVERSION LICENSE AMENDMENT REQUEST (LAR) NOS. 296 (UNIT 1) AND 169 (UNIT 2)

CHANGE NO. 6

APPROVAL OF LAR NOS. 306 (UNIT 1) AND 176 (Unit 2)

LAR Nos. 306 and 176 proposed changes to revise the current 72 hour action allowed outage time (AOT) specified in Technical Specification (TS) 3.8.1.1 to allow 14 days to restore an inoperable emergency diesel generator (EDG) to operable status. The proposed AOT change is based on a risk evaluation which was developed in accordance with the guidelines established in Regulatory Guide 1 .174, "An Approach for Using Probabilistic Risk Assessment in Risk-informed Decisions on Plant-Specific Changes to the Licensing Basis" and Regulatory Guide 1 .177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications." Additionally, the proposed amendment deletes TS surveillance requirement (SR) 4.8.1.1.2.b.1 which requires an EDG inspection, in accordance with the manufacturer's recommendations, every 18 months during shutdown. The proposed changes also modify footnote (1) of TS 3.8.1.1. The proposed footnote changes would provide clarifications to the current wording and permit the applicable action requirements to be delayed for up to 7 days when the EDGs are inoperable solely as a result of failure to meet SRs 4 .8.1 .1 .2 .d.2 or 4.8.1.1.2.e. LAR Nos. 306 and 176 were approved by the NRC in license amendment Nos. 268 (Unit 1) and 150 (Unit 2) issued September 29, 2005 (TAC Nos. MC3331 and MC3332). The BVPS ITS Conversion LAR submitted in February of 2005 anticipated the approval of LAR Nos. 306 and 176 and incorporated pages from these LARs marked as draft pages referencing the appropriate LAR number. Therefore, the enclosed replacement pages are the same as the original pages with the exception that the "Draft" annotation is removed and the new amendment number (268 or 150 as appropriate) is included in the footer. Note that pages still affected by an outstanding LAR (i.e., draft pages) will not have an amendment number in the footer. Note that this Amendment added Bases text not anticipated in the ITS conversion LAR. The new Bases text explains the use of the 14-day AOT and required additional ITS 3.8.1 Bases changes (in the Actions section) to fully implement the required changes. Each of the following replacement pages is also annotated at the top to identify the page as Revision 1 to the February 28, 2005 (date of NRC receipt) submittal.

NOTE: ALL PAGE NUMBERS ARE REFERENCED FROM THE LOWER RIGHT CORNER PAGE NUMBER ANNOTATED IN BOLD TEXT.

<u>SECTION 3.8 REPLACEMENT PAGES</u>

68	176
70	177
73	178
97	182
175	183

BASES

LCO (continued)

9

electrical

5

A circuit that is not connected to an ESF bus is required to have OPERABLE fast transfer capability to align that circuit to its associated ESF bus.

The AC sources in one train must be separate and independent (to the extent possible) of the AC sources in the other train. For the DGs, separation and independence are complete.

For the offsite AC sources, separation and independence are to the extent practical. ~~A circuit may be connected to more than one ESF bus, with fast transfer capability to the other circuit OPERABLE, and not violate separation criteria. A circuit that is not connected to an ESF bus is required to have OPERABLE fast transfer interlock mechanisms to at least two ESF buses to support OPERABILITY of that circuit.~~ 5

2

timer(s)

APPLICABILITY

The AC sources ~~{and sequencers}~~ are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure that:

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of AOOs or abnormal transients and

b. Adequate core cooling is provided and containment OPERABILITY and other vital functions are maintained in the event of a postulated DBA.

TSTF-359

The AC power requirements for MODES 5 and 6 are covered in LCO 3.8.2, "AC Sources - Shutdown."

ACTIONS

A Note prohibits the application of LCO 3.0.4.b to an inoperable DG. There is an increased risk associated with entering a MODE or other specified condition in the Applicability with an inoperable DG and the provisions of LCO 3.0.4.b, which allow entry into a MODE or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and components, should not be applied in this circumstance.

INSERT CTS Bases Text
For AAC Requirements for 14-day AOT

A.1

To ensure a highly reliable power source remains with one offsite circuit inoperable, it is necessary to verify the OPERABILITY of the remaining required offsite circuit on a more frequent basis. Since the Required Action only specifies "perform," a failure of SR 3.8.1.1 acceptance criteria does not result in a Required Action not met. However, if a second required circuit fails SR 3.8.1.1, the second offsite circuit is inoperable, and Condition C, for two offsite circuits inoperable, is entered.

~~- REVIEWER'S NOTE -~~
~~The turbine driven auxiliary feedwater pump is only required to be considered a redundant required feature, and, therefore, required to be determined OPERABLE by this Required Action, if the design is such that the remaining OPERABLE motor or turbine driven auxiliary feedwater pump(s) is not by itself capable (without any reliance on the motor driven~~ 3

Rev. 1 to 2/28/05 submittal

BASES

ACTIONS (continued)

The following discussion and the 17-day Completion Time stated in the Action Condition assume the extended 14-day DG Completion Time is applied (see the requirements for applying the extended DG Completion Time discussed at the beginning of the Actions section of the Bases). If the Normal 72 hour DG Completion Time is applied, the limiting Completion Time for not meeting the LCO discussed below would be 144 hours (72 hours plus 72 hours) instead of 17 days (72 hours plus 14 days).

2

reasonable time for repairs, and the low probability of a DBA occurring during this period.

A.3

According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition A for a period that should not exceed 72 hours. With one offsite circuit inoperable, the reliability of the offsite system is degraded, and the potential for a loss of offsite power is increased, with attendant potential for a challenge to the unit safety systems. In this Condition, however, the remaining OPERABLE offsite circuit and DGs are adequate to supply electrical power to the onsite Class 1E Distribution System.

The 72 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

The second Completion Time for Required Action A.3 establishes a limit on the maximum time allowed for any combination of required AC power sources to be inoperable during any single contiguous occurrence of failing to meet the LCO. If Condition A is entered while, for instance, a DG is inoperable and that DG is subsequently returned OPERABLE, the LCO may already have been not met for up to ~~72 hours~~ 14 days. This could lead to a total of ~~144 hours~~ 17 days, since initial failure to meet the LCO, to restore the offsite circuit. At this time, a DG could again become inoperable, the circuit restored OPERABLE, and an additional ~~72 hours~~ 14 days (for a total of ~~9~~ 31 days) allowed prior to complete restoration of the LCO. The ~~6~~ 17 day Completion Time provides a limit on the time allowed in a specified condition after discovery of failure to meet the LCO. This limit is considered reasonable for situations in which Conditions A and B are entered concurrently. The "AND" connector between the 72 hour and ~~6~~ 17 day Completion Times means that both Completion Times apply simultaneously, and the more restrictive Completion Time must be met.

As in Required Action A.2, the Completion Time allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." This will result in establishing the "time zero" at the time that the LCO was initially not met, instead of at the time Condition A was entered.

B.1

To ensure a highly reliable power source remains with an inoperable DG, it is necessary to verify the availability of the offsite circuits on a more

The 14-day Completion Time is a risk informed and based on a plant specific risk analysis and includes the normal 72-hour Completion Time which is not risk informed.

The Completion Time specified for Required Action B.4 is the extended 14-day DG Completion Time (see the requirements for applying the extended DG Completion Time discussed at the beginning of the Actions section of the Bases). If the requirements for the 14-day Completion Time are not met, the normal 72-hour Completion Time applies. If the 14-day Completion Time is applied, and if at any time during this extended Completion Time the requirements for using the 14-day Completion Time are not met, the 72-hour Completion Time becomes applicable unless the 72-hour Completion Time has expired, in which case the shutdown requirements of Action Condition G would apply.

ACTIONS (continued)

B.4

2

~~According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition B for a period that should not exceed 72 hours.~~

In Condition B, the remaining OPERABLE DG and offsite circuits are adequate to supply electrical power to the onsite Class 1E Distribution System. The ~~72-hour~~ Completion Time also takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

2

The following discussion and the Completion Times specified for Required Action B.4 assume the extended 14-day DG Completion Time is applied (see the requirements for applying the extended DG Completion Time discussed at the beginning of the Actions section of the Bases). If the normal 72 hour DG Completion Time is applied, the limiting Completion Time for not meeting the LCO discussed below would be 144 hours (72 hours plus 72 hours) instead of 17 days (72 hours plus 14 days).

The second Completion Time for Required Action B.4 establishes a limit on the maximum time allowed for any combination of required AC power sources to be inoperable during any single contiguous occurrence of failing to meet the LCO. If Condition B is entered while, for instance, an offsite circuit is inoperable and that circuit is subsequently restored OPERABLE, the LCO may already have been not met for up to 72 hours. This could lead to a total of ~~144 hours,~~ 17 days since initial failure to meet the LCO, to restore the DG. At this time, an offsite circuit could again become inoperable, the DG restored OPERABLE, and an additional 72 hours (for a total of ~~9~~ 20 days) allowed prior to complete restoration of the LCO. The ~~6~~ 17 day Completion Time provides a limit on time allowed in a specified condition after discovery of failure to meet the LCO. This limit is considered reasonable for situations in which Conditions A and B are entered concurrently. The "AND" connector between the ~~72-hour~~ 14 day and ~~6~~ 17 day Completion Times means that both Completion Times apply simultaneously, and the more restrictive Completion Time must be met.

As in Required Action B.2, the Completion Time allows for an exception to the normal "time zero" for beginning the allowed time "clock." This will result in establishing the "time zero" at the time that the LCO was initially not met, instead of at the time Condition B was entered.

C.1 and C.2

Required Action C.1, which applies when two offsite circuits are inoperable, is intended to provide assurance that an event with a coincident single failure will not result in a complete loss of redundant required safety functions. The Completion Time for this failure of redundant required features is reduced to 12 hours from that allowed for one train without offsite power (Required Action A.2). The rationale for the reduction to 12 hours is that Regulatory Guide 1.93 (Ref. 6) allows a Completion Time of 24 hours for two required offsite circuits inoperable,

13. License Amendment Nos. 268 (Unit 1) and 150 (Unit 2) and associated NRC Safety Evaluation Report issued September 29, 2005.

REFERENCES (continued)

Insert For Action Section of Bases. This text is from the CTS Bases as revised by Amendments Nos. 268 (Unit 1) and 150 (Unit 2) issued 9/29/05 for the 14-day DG AOT. TAC Nos. MC3331 & MC3332.

1

October 1979 (Unit 2)

10. Regulatory Guide 1.137, Rev. [ ], ~~[date]~~.

11. ASME, Boiler and Pressure Vessel Code, Section XI.

6

12. IEEE Standard 308-~~1978~~

Unit 1-1971 and Unit 2-1974.

Requirements for applying the 14-day DG Completion Time

The ACTION Conditions for inoperable AC sources provide a 14-day Completion Time when one DG is inoperable. The 14 day Completion Time includes the normal 72 hour Completion Time which is not risk informed, followed by an 11 day extension period that is based on a plant specific risk analysis performed to establish the overall Completion Time (Ref 13).

As a defense in depth measure, when the option of an extended Completion Time (i.e., a time beyond the normal 72 hours) for a DG is exercised, alternate AC (AAC) power will be provided with capability of supplying safe shutdown loads during a station blackout without the need for rescheduling of safety system operation in the unaffected unit. For unplanned DG outages, capability to supply AAC power will be available upon entering the Completion Time extension (i.e. by 72 hours into the Completion Time). For outages planned to exceed an initial 72-hour Completion Time, AAC power will be provided within one hour of entering the Action Condition for an inoperable DG. In any event, if AAC power of the required capacity is not available after entering the extended Completion Time (after 72 hours into the Completion Time), the Required Actions of Action Condition G become applicable (i.e., Be in MODE 3 in 6 hours and Be in MODE 5 in 36 hours).

The following criteria would apply to any AAC source used as a defense in depth measure:

1. An AAC power source may be of a temporary or permanent nature and would not be required to satisfy Class 1E requirements.

2. Dynamic effects of an AAC power source failure (GDC-4 events) would not adversely affect safety related plant equipment.

3. An AAC power source would not be required to be protected against natural phenomena (GDC-2 events) or abnormal environmental or dynamic effects (GDC-4 events).

4. An AAC power source would be capable of starting and carrying designated loads required for safe shutdown, including maintaining adequate voltage and frequency such that performance of powered equipment is acceptable.

Prior to relying on its availability, a temporary AAC power source would be determined to be available by: (1) starting the AAC source and verifying proper operation; (2) verifying that sufficient fuel is available onsite to support 24 hours of operation; and (3) ensuring that the AAC source is in the correct electrical alignment to supply power to designated safe shutdown loads. Subsequently, when not in operation, a status check for availability will also be performed once every 72 hours. This check consists of (1) verifying the AAC source is mechanically and electrically ready for operation; (2) verifying that sufficient fuel is available onsite to support 24 hours of operation; and (3) ensuring that the AAC source is in the correct electrical alignment to supply power to designated safe shutdown loads.

Prior to relying on its availability, a permanent AAC power source would be determined to be available by starting the AAC source and verifying proper operation. In addition, initial and periodic testing, surveillance, and maintenance conform to NUMARC 87-00, Revision 1, Appendix B, "Alternate AC Power Criteria" guidelines. The guidelines include provisions for quarterly functional testing, timed starts and load capacity testing on a fuel cycle basis, surveillance and maintenance consistent with manufacturer's recommendations, and initial testing of capability to power required shutdown equipment within the necessary time.

Rev. 1 to 2/28/05 submittal

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

A1

ITS 3.8.1 & 3.8.3

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

qualified A5 A22 and sequencer timer(s)

a. Two ~~physically independent~~ circuits between the offsite transmission network and the onsite Class 1E distribution system, and

LA3 A4 (DGs) capable of supplying the onsite Class 1E power distribution subsystem(s)

b. Two ~~separate and independent~~ diesel generators each with:

SR 3.8.1.4.2 A2 1. Separate day tank containing a minimum of 350 ~~usable~~ gallons of fuel,

LA1

SR 3.8.3.1 A3 2. A separate fuel ~~storage~~ system containing a minimum of 53,225 ~~usable~~ gallons of fuel,

SR 3.8.1.6 3. A separate ~~fuel~~ transfer pump, L4

330

SR 3.8.3.2 A7 4. Lubricating oil storage containing a minimum total volume of ~~504~~ gallons of lubricating oil, and

~~5. Capability to transfer lubricating oil from storage to the diesel generator unit.~~ LA12

LCO part c

M16

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION: Insert LCO part c A22 L1 Insert Condition A.2 Insert 2nd Completion Time

---

Specification 3.0.4.b is not applicable to diesel generators.

ITS 3.8.1 Condition A

a. With one offsite circuit inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing ~~Surveillance Requirement 4.8.1.1.1.a~~ within 1 hour and at least once per 8 hours thereafter. Restore the offsite circuit to OPERABLE status within 72 hours ~~or be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.~~ A14

SR 3.8.1.1 Insert Condition B.2

ITS 3.8.1 Condition B

b. With one diesel generator~~(1)~~ inoperable, demonstrate the OPERABILITY of the A.C. offsite sources by performing Surveillance Requirement ~~4.8.1.1.1.a~~ within 1 hour and at least once per 8 hours thereafter; and if the diesel L2

LA11 SR 3.8.1.1

ITS 3.8.3 Cond C

(1) Required actions ~~may~~ be delayed for up to 7 days if the diesel generator(s) is inoperable solely due to the fuel oil contained in the storage tanks not meeting ~~the properties in accordance with 4.8.1.1.2.d.2 or 4.8.1.1.2.e.~~ particulates limit A8

Rev. 1 to 2/28/05 submittal

ITS 3.8.1

ACTION (Continued)

A23

L3 Insert Condition B.3.1

Insert Condition B.3.2

ITS 3.8.1 Condition B

generator became inoperable ~~due to any cause other than an independently testable component, testing or preplanned preventative maintenance, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.5~~ within 24 hours~~(2)~~ ~~unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated.~~ Restore the diesel generator to OPERABLE status within 14 days ~~or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~

A14

Insert 2nd Completion Time M16

ITS 3.8.1 Condition D

c. With one offsite circuit and one diesel generator~~(1)~~ inoperable, ~~demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; and if the diesel generator became inoperable due to any cause other than an independently testable component, testing or preplanned preventative maintenance, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.5 within 8 hours(2) unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated.~~ Restore one of the inoperable sources to OPERABLE status within 12 hours ~~or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore the other A.C. power source (offsite circuit or diesel generator) to OPERABLE status in accordance with the provisions of Action Statement a or b, as appropriate with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable A.C. power source. A successful test of diesel OPERABILITY per Surveillance Requirement 4.8.1.1.2.a.5 performed under this Action Statement for an OPERABLE diesel or a restored to OPERABLE diesel satisfies the diesel generator test requirement of Action Statement b.~~

A15

Insert Note Action D

A9

ITS 3.8.1 Condition D

A14

A10

A8

~~(1) Required actions may be delayed for up to 7 days if the diesel generator(s) is inoperable solely due to the fuel oil contained in the storage tanks not meeting the properties in accordance with 4.8.1.1.2.d.2 or 4.8.1.1.2.e.~~

LA11

(2) ~~This action is required to be completed regardless of when the inoperable diesel generator is restored to OPERABILITY.~~

L3

Rev. 1 to 2/28/05 submittal

ITS 3.8.1

LIMITING CONDITION FOR OPERATION

ACTION (Continued)

L5 Insert Required Action C.1

ITS 3.8.1 Condition C

d. With two of the required offsite A.C. circuits inoperable, restore one of the inoperable offsite sources to OPERABLE status within 24 hours ~~or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~ ~~Following restoration of one offsite source, follow Action Statement a with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable offsite A.C. circuit.~~ A14 A11

e. With two of the required diesel generators~~(1)~~ inoperable, ~~demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter;~~ restore one of the inoperable diesel generators to OPERABLE status within 2 hours ~~or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~ ~~Following restoration of one diesel generator unit, follow Action Statement b with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable diesel generator. A successful test of diesel OPERABILITY per Surveillance Requirement 4.8.1.1.2.a.5 performed under this Action Statement for a restored to OPERABLE diesel satisfies the diesel generator test requirement of Action Statement b.~~

A13 ITS 3.8.1 Condition F A14 A12 L8

Insert Action F

Insert Action G

Insert Action H

A14

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be: A16

SR 3.8.1.1

a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignment, indicated power availability, and

SR 3.8.1.7

b. Demonstrated OPERABLE at least once per 18 months by transferring (manually and automatically) unit power supply from the unit circuit to the system circuit.

A8

~~(1) Required actions may be delayed for up to 7 days if the diesel generator(s) is inoperable solely due to the fuel oil contained in the storage tanks not meeting the properties in accordance with 4.8.1.1.2.d.2 or 4.8.1.1.2.e.~~ LA11

L23

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE: A2

a. At least once per 31 days on a ~~STAGGERED TEST BASIS~~ by:

SR 3.8.1.4.2 1. Verifying the fuel level in the day tank, contains ≥ 350 gallons of fuel oil.

SR 3.8.3.1 2. Verifying the fuel level in the fuel storage tank, contains ≥ 53,225 gallons of fuel oil. A3

3. ~~(Deleted)~~

SR 3.8.1.6 L17 4. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the ~~day~~ tank, every 92 days L19

Insert SR notes A17

SR 3.8.1.2 5. Verifying the diesel starts from standby conditions, ~~(4)~~ and achieves steady state voltage ~~(3)~~ of ≥ 3994 volts and ≤ 4368 volts and frequency ~~(3)~~ of ≥ 59.9 Hz and ≤ 60.3 Hz, M12

Insert SR notes

L6

SR 3.8.1.3 6. Verifying the generator is synchronized, loaded(5) ~~to ≥ 4,238 kw~~, and operates for ≥ 60 minutes, Insert limits

7. ~~Verifying the diesel generator is aligned to provide standby power to the associated emergency busses, and~~ LA4

SR 3.8.3.2 8. Verifying the lubricating oil inventory ~~in storage~~. ≥ 330 gallons

A7 b. At least once per 18 months ~~during shutdown~~ by: A21

1. (Deleted) M11 Insert SR notes L14

SR 3.8.1.8 2. Verifying the generator capability to reject ~~a~~ load ~~≥ 825 kw~~ without tripping and without exceeding 64.4 Hz(7).

LA2 single largest post-accident Insert time, V, & Hz limits M15

LA6 (3) The values for voltage and frequency are analysis values. These value bands shall be appropriately reduced to account for measurement uncertainties.

A17 (4) All diesel generator starts may be preceded by an engine prelube period and followed by a warmup period prior to loading.

(5) Diesel generator loadings may include gradual loading as recommended by the manufacturer. or based on operating experience L19

(7) ~~The value for frequency shall be appropriately reduced to account for measurement uncertainties.~~ LA7

Rev. 1 to 2/28/05 submittal

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

ITS 3.8.1 & 3.8.3

UNIT 1 PAGE

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power ~~sources~~ shall be OPERABLE:

a. Two physically inde[pendent circuits betw]een the offsite transmission network [and the onsite Class] 1E distribution system, and

b. Two separate and ind[ependent diesel generat]ors each with:

Note that changes to this portion of the Unit 1 TS are addressed in the markup of the Unit 2 TS.

SR 3.8.1.4.1 A2

1. Separate day and engine-mounted fuel tanks containing a minimum of 900 ~~usable~~ gallons of fuel, LA1 M1

SR 3.8.3.1 A3

2. A separate fuel ~~storage system~~ containing a minimum of 17,500 ~~usable~~ gallons of fuel, and

Insert lube oil requirements

3. A separate fuel transfer pump.

Note that changes to this portion of the Unit 1 TS are addressed in the markup of the Unit 2 TS.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

a. With one offsite circuit inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Restore the offsite circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.

b. With one diesel generator(1) inoperable, demonstrate the OPERABILITY of the A.C. offsite sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and if the diesel generator became inoperable due to any cause other than an independently testable component, testing or preplanned preventative maintenance, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing

(1) Required actions may be delayed for up to 7 days if the diesel generator(s) is inoperable solely due to the fuel oil contained in the storage tanks not meeting the properties in accordance with 4.8.1.1.2.d.2 or 4.8.1.1.2.e.

Rev. 1 to 2/28/05 submittal

ITS 3.8.1 & 3.8.3

UNIT 1 PAGE

SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.2 Each ~~diesel generator~~ shall ~~be demonstrated~~ OPERABLE:

~~a. At least once per 31 days on a STAGGERED TEST BASIS by:~~

SR 3.8.1.4.1 — 1. Verifying the fuel level in the day and engine-mounted fuel tank, contain a combined total of ≥ 900 gallons of fuel oil. A2

SR 3.8.3.1 — 2. Verifying the fuel level in the fuel storage tank, contains ≥ 17,500 gallons of fuel oil. A3

3. ~~(Deleted)~~

SR 3.8.1.6 — 4. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the day ~~and engine-mounted~~ tank, every 92 days L17 Insert SR notes A17

SR 3.8.1.2 — 5. Verifying the diesel starts from standby conditions,~~(4)~~ and can be gradually accelerated to synchronous speed with generator voltage~~(3)~~ ≥ 4106 volts and ≤ 4368 volts and frequency~~(3)~~ ≥ 58.8 Hz and ≤ 61.2 Hz, Insert limits M2 Insert SR notes M12

SR 3.8.1.3 — 6. Verifying the generator is synchronized, loaded~~(5)~~ to ≥ ~~1425 kw~~, and operates for ≥ 60 minutes, ~~and~~ L6

~~7. Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.~~

~~b. At least once per 18 months during shutdown by:~~

~~1. (Deleted)~~ M11 Insert SR notes L14

SR 3.8.1.8 — 2. Verifying the generator capability to reject a ~~load of ≥ 615 kw~~ single largest post-accident load without tripping and without exceeding 66.2 Hz,~~(7)~~ LA2 Insert time, V, & Hz M15 LA2

~~(3) The values for voltage and frequency are analysis values. These value bands shall be appropriately reduced to account for measurement uncertainties.~~

~~(4) All diesel generator starts may be followed by a warmup period prior to loading.~~

~~(5) Diesel generator loadings may include gradual loading as recommended by the manufacturer.~~

~~(7) The value for frequency shall be appropriately reduced to account for measurement uncertainties~~

Note: Changes to this portion of the Unit 1 TS are addressed in the markup of the Unit 2 TS.

REVISION 1 TO BEAVER VALLEY POWER STATION (BVPS) UNIT 1 AND UNIT 2 IMPROVED TECHNICAL SPECIFICATION (ITS) CONVERSION LICENSE AMENDMENT REQUEST (LAR) NOS. 296 (UNIT 1) AND 169 (UNIT 2)

CHANGE NO. 7

SUBMITTAL OF UNIT 2 LAR NO. 202

The proposed Technical Specification changes in Unit 2 LAR No. 202 to permit implementation of design changes associated with a battery charger upgrade. The battery charger function of the Unit 2 rectifiers will be replaced by a battery charger. The proposed change would eliminate the Technical Specification references to the Unit 2 rectifiers. Similar to the Unit 1 Technical Specifications and the standard Technical Specifications for Westinghouse plants in NUREG-1431, the result of the proposed change will be that the affected Unit 2 Technical Specifications will only refer to battery chargers. This Unit 2 LAR was submitted to the NRC by FENOC letter dated October 14, 2005 and approval has been requested prior to the implementation of the BVPS ITS conversion License Amendment. Therefore, the Technical Specification changes proposed in this Unit 2 LAR have been incorporated into the ITS conversion LAR and are provided in the enclosed replacement pages with "Draft Page From Unit 2 LAR 202" annotated at the top of each current Technical Specification page. In addition to the affected Technical Specification pages, the elimination of the term rectifier has resulted in some ITS Bases changes and numerous minor changes in the ITS conversion LAR Discussion of Changes (DOCs) to replace rectifier with battery charger or eliminate the reference to rectifier as appropriate. Each of the following replacement pages is also annotated at the top to identify the page as Revision 1 to the February 28, 2005 (date of NRC receipt) submittal.

NOTE: ALL PAGE NUMBERS ARE REFERENCED FROM THE LOWER RIGHT CORNER PAGE NUMBER ANNOTATED IN BOLD TEXT.

<u>SECTION 3.8 REPLACEMENT PAGES</u>

114	279
124	280
126	281
202	282
210	283
266	284
273	287
275	288
276	289
278	

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.4 DC Sources - Operating

1 described

2 Reference

BASES

BACKGROUND

The station DC electrical power system provides the AC emergency power system with control power. It also provides both motive and control power to selected safety related equipment and preferred AC vital bus power (via inverters). As ~~required~~ by ~~10 CFR 50, Appendix A, GDC 17 (Ref.~~ 1), the DC electrical power system is designed to have sufficient independence, redundancy, and testability to perform its safety functions, assuming a single failure. The DC electrical power system also conforms to the recommendations of Regulatory Guide 1.6 (Ref. 2) and IEEE-308 (Ref. 3) as addressed in the UFSAR.

3 INSERT 1

The {125/~~250~~} VDC electrical power system consists of two independent and redundant safety related Class 1E DC electrical power subsystems ({Train A and Train B}). Each subsystem consists of {two} 125 VDC batteries {(each battery ~~{50}% capacity~~)}, the associated battery charger(s) for each battery, and all the associated control equipment and interconnecting cabling. 100 % capacity for that portion of the subsystem

[~~The 250 VDC source is obtained by use of the two 125 VDC batteries connected in series. Additionally there is {one} spare battery charger per subsystem, which provides backup service in the event that the preferred battery charger is out of service. If the spare battery charger is substituted for one of the preferred battery chargers, then the requirements of independence and redundancy between subsystems are maintained.~~] 4

During normal operation, the {125/~~250~~} VDC *load is powered from the* battery chargers with the batteries floating on the system. In case of loss of normal power to the battery charger, the DC load is automatically powered from the station batteries.

The {Train A and Train B} DC electrical power subsystems provide the control power for its associated Class 1E AC power load group, {4.16} kV switchgear, and {480} V load centers. The DC electrical power subsystems also provide DC electrical power to the inverters, which in turn power the AC vital buses.

The DC power distribution system is described in more detail in Bases for LCO 3.8.9, "Distribution System - Operating," and LCO 3.8.10, "Distribution Systems - Shutdown."

Rev. 1 to 2/28/05 submittal

3.8.4 BASES INSERTS

1. For Unit 1, the required battery banks are Banks 1-1 and 1-3 on the orange bus and Banks 1-2 and 1-4 on the purple bus. The Unit 1 battery chargers are designated 1-1 and 1-3 on the orange bus and 1-2 and 1-4 on the purple bus. The required Unit 2 battery banks are Banks 2-1 and 2-3 on the orange bus and Banks 2-2 and 2-4 on the purple bus. The Unit 2 battery chargers are designated 2-1 and 2-3 on the orange bus and 2-2 and 2-4 on the purple bus. In addition, for Unit 2, a spare, fully qualified charger (2–7) is also provided. Spare Charger (2-7) may be substituted for any inoperable charger or charger removed from service for maintenance. One safety switch is provided for each DC bus to provide a backup method for battery charging and bus supply if the primary charger is out of service. This is discussed in the UFSAR, Chapter 8 (Ref 4).

APPLICABLE SAFETY ANALYSES (continued)

within the reactor pressure boundary, reactor coolant temperature and pressure, and the corresponding stresses result in the probabilities of occurrence being significantly reduced or eliminated, and in minimal consequences. These deviations from DBA analysis assumptions and design requirements during shutdown conditions are allowed by the LCO for required systems.

S 3 DBAs

The shutdown Technical Specification requirements are designed to ensure that the unit has the capability to mitigate the consequences of certain postulated accidents. Worst case ~~Design Basis Accidents~~ which are analyzed for operating MODES are generally viewed not to be a significant concern during shutdown MODES due to the lower energies involved. The Technical Specifications therefore require a lesser complement of electrical equipment to be available during shutdown than is required during operating MODES. More recent work completed on the potential risks associated with shutdown, however, have found significant risk associated with certain shutdown evolutions. As a result, in addition to the requirements established in the Technical Specifications, the industry has adopted NUMARC 91-06, "Guidelines for Industry Actions to Assess Shutdown Management," as an Industry initiative to manage shutdown tasks and associated electrical support to maintain risk at an acceptable low level. This may require the availability of additional equipment beyond that required by the shutdown Technical Specifications.

The DC sources satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

5

The DC electrical power subsystems, ~~[each required]~~ [the required] [subsystem consisting of two batteries, one battery charger per battery, and the corresponding control equipment and interconnecting cabling within ~~[one]~~ the train, ~~[are]~~ [is] required to be OPERABLE to support ~~[required]~~ [one] train~~[s]~~ of the distribution systems required OPERABLE by LCO 3.8.10, "Distribution Systems - Shutdown."] This ensures the availability of sufficient DC electrical power sources to operate the unit in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents [involving handling ~~recently irradiated~~ fuel]).

APPLICABILITY

The DC electrical power sources required to be OPERABLE in MODES 5 and 6, and during movement of ~~[recently] irradiated~~ fuel assemblies, provide assurance that:

3

Rev. 1 to 2/28/05 submittal

Draft Page From Unit 2 LAR No. 202

ITS 3.8.4, 3.8.6, & 3.8.9

LCO 3.8.6, App. Note

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

A1 A8

LIMITING CONDITION FOR OPERATION

Insert LCO, Applicability, and Action Note for 3.8.6

A4

LCO 3.8.4

LCO 3.8.9

3.8.2.3 The ~~following~~ D.C. ~~bus trains~~ electrical power subsystems shall be ~~energized and~~ OPERABLE: LA1 3.8.4 Bases and 3.8.9 Bases

A2

~~TRAIN "A" (orange) consisting of 125-volt D.C. busses No. 2-1 & 2-3, 125-volt D.C. battery banks 2-1 & 2-3 and chargers 2-1 & 2-3.~~

~~TRAIN "B" (purple) consisting of 125-volt D.C. busses No. 2-2 & 2-4, 125-volt D.C. battery banks 2-2 & 2-4 and chargers 2-2 & 2-4.~~

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION: A5 A6

Insert LCO 3.8.9 Condition C.1 second Completion Time

LCO 3.8.4 Actions B, C, & D

a. With one or two ~~of the required~~ battery banks on the same train inoperable, restore the inoperable battery bank to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN ~~within the following~~ 30 hours. L4 M1

LCO 3.8.9 Actions C & D

b. With one or two ~~of the required full capacity~~ chargers on the same train inoperable, ~~demonstrate the OPERABILITY of its associated battery bank by performing Surveillance Requirement 4.8.2.3.2.a.1 within one hour.~~ ~~Within 4 hours place in service a spare charger or continue the Surveillance Requirement of 4.8.2.3.2.a.1 at least once per 8 hours thereafter. If any Category A limit in Table 3.8-1 is not met, declare the battery inoperable.~~ L5 M2 L6

LCO 3.8.4 Action A

M5

Insert Required Actions A.1, A.2, & A.3 and Completion Times

SURVEILLANCE REQUIREMENTS

LA3

4.8.2.3.1 Each D.C. ~~bus train~~ electrical power distribution subsystem shall be determined OPERABLE ~~and energized~~ at least once per 7 days by verifying correct breaker alignment and ~~indicated power availability~~ correct voltage.

SR 3.8.9.1

4.8.2.3.2 Each 125-volt battery bank and charger shall be demonstrated OPERABLE:

a. At least once per 7 days by verifying that: M3 L9

L11

1. ~~The parameters in Table 3.8-1 meet the Category A limits, and~~

SR 3.8.4.1

2. The total battery terminal voltage is greater than or equal to ~~127.8 volts on float charge~~ the minimum established float voltage LA2

L8

b. At least once per 92 days ~~and within 7 days after a battery discharge with battery terminal voltage below 110 volts, or battery overcharge with battery terminal voltage above 150 volts,~~ by verifying that:

Rev. 1 to 2/28/05 submittal

Draft Page From Unit 2 LAR No. 202

ITS 3.8.5 & 3.8.10

LCO 3.8.5

D.C. DISTRIBUTION - SHUTDOWN

A1

LIMITING CONDITION FOR OPERATION

subsystem

A2

3.8.2.4 ~~As a minimum,~~ one of the following trains of D.C. ~~electrical equipment and busses~~ shall be OPERABLE ~~and energized in the specified manner:~~

L1

LA1

A3

a. Train "A" ~~(orange) consisting of the following:~~

~~1. 125-volt D.C. busses No. 2-1 & 2-3, and~~
~~2. 125-volt D.C. battery banks 2-1 & 2-3 and chargers 2-1* & 2-3*.~~

b. Train "B" ~~(purple) consisting of the following:~~

~~1. 125-volt D.C. busses No. 2-2 & 2-4, and~~
~~2. 125-volt D.C. battery banks 2-2 & 2-4 and chargers 2-2* & 2-4*.~~

LCO 3.8.10

APPLICABILITY: MODES 5 and 6, and

Action Note: LCO 3.0.3 is not applicable.

During movement of recently irradiated fuel assemblies, and

During movement of fuel assemblies over recently irradiated fuel assemblies.

A4

additions that could result in loss of required SDM or boron concentration.

L3

ACTION:

L5

With the above required train of D.C. electrical equipment and busses not fully OPERABLE, immediately suspend all operation involving CORE ALTERATIONS, positive reactivity ~~changes~~, movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies. Initiate corrective action to restore the required train of D.C. electrical equipment and busses to OPERABLE status as soon as possible.

A5

L2

Declare affected required feature(s) inoperable, or

M1

A6

SR 3.8.10.1

SURVEILLANCE REQUIREMENTS

correct voltage

4.8.2.4.1 The above required 125-volt D.C. bus train shall be determined OPERABLE ~~and energized~~ at least once per 7 days by verifying correct breaker alignment and ~~indicated power availability~~.

4.8.2.4.2 The above required 125-volt battery bank and chargers shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

LA1

L4

A7

~~* A spare charger may be substituted for any inoperable charger or charger removed from service for maintenance.~~

SRs 3.8.4.1, 3.8.4.2, 3.8.4.3

Note to SR 3.8.5.1.The following SRs are not required to be performed: SR 3.8.4.2 and 3.8.4.3.

limited time that the train of batteries is allowed to be inoperable. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.5 *(Category 4 – Relaxation of Required Action)* CTS LCO 3.8.2.3 Action b, in part states with one of the battery charger inoperable, restore the inoperable battery charger to OPERABLE status with specific limitations. ITS LCO 3.8.4 Required Action A requires with one or two battery chargers on one train inoperable restore the inoperable battery changers to OPERABLE status within specific limitations. This changes the CTS by allowing more than one battery charger to be inoperable if the battery chargers are on the same train.

The purpose of ITS LCO Required Action A is to limit one train of battery chargers to be inoperable. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a design basis accident occurring during the repair period. This change allows both battery chargers on the same train to be inoperable with specific limitations. The remaining train of batteries and battery chargers ensure accident analysis assumptions are met for the limited time that the train of battery chargers is allowed to be inoperable. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.6 *(Category 4 – Relaxation of Required Action)* CTS 3.8.2.3 Action b in part states with one of the required full capacity chargers inoperable, demonstrate the OPERABILITY of its associated battery bank by performing Surveillance Requirement 4.8.2.3.2.a.1 within one hour. The requirement goes on to state that the action requires the Surveillance Requirement of 4.8.2.3.2.a.1 to be continued for at least once per 8 hours thereafter and if any Category A limit in Table 3.8-1 is not met, declare the battery inoperable. ITS LCO 3.8.4 Condition A states with one or two battery chargers on one train inoperable, restore battery terminal voltage to greater than or equal to the minimum established float voltage with 2 hours (Required Action A.1). Required Action A.2 states a verification of float current of ≤ 2 amps is required once per 12 hours. Required Action A.3 specifies that the inoperable charger(s) must be restored to OPERABLE status within 7 days. This changes the CTS by allowing the battery terminal voltage to be restored to the minimum established float voltage with float current to be ≤ 2 amps and restoring the charger(s) to OPERABLE status within 7 days.

The purpose of ITS Required Actions A.1, A.2, and A.3 is to allow appropriate correct actions with appropriate time limitations to restore inoperable battery chargers to OPERABLE status. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining

the minimum established design temperature limit which is 50 °F. The specific temperature limit is decreased from 60 °F to 50 °F.

The purpose of ITS SR 3.8.6.4 minimum established design temperature limit is to ensure the battery can function as designed and required to mitigate the consequences of analyzed event. This change is acceptable because the relaxed Surveillance Requirement acceptance criteria are adequate to verify that the equipment used to meet the LCO can perform its required functions. The change from 60 °F to 50 °F is acceptable because the design temperature stated in the Unit 1's UFSAR for the cell's electrolyte temperature is 50 °F. For Unit 2 the proposed change is also aceptable because it is consistent with the design limits of the Unit 2 battery. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

More Restrictive Changes (M)

M.1 CTS LCO 3.8.2.3 Action a specifies with one of the required battery banks inoperable, restore the inoperable battery bank to OPERABLE status within 2 hours. ITS LCO 3.8.9 Condition C requires with one or more DC electrical power subsystems inoperable, restore the DC electrical power subsystem to OPERABLE status within 2 hours. ITS LCO 3.8.9 Condition C provides an additional limitation on the Completion Time. This specifies the two-hour requirement and 16 hours from discovery of failure to meet the LCO. This changes the CTS by requiring an additional limitation that is not currently required.

This purpose of the additional ITS Completion Time is to ensure the overall electrical distribution systems do not remain in a degraded state for more than 16 total hours. This change is acceptable because the additional requirement provides a reason limit for a degraded electrical distribution subsystem. The ITS requirements are consistent with the ISTS wording for this requirement. This change is designated as more restrictive because it adds additional surveillance requirement that the CTS does not require.

M.2 Unit 2 CTS LCO 3.8.2.3 Action b in part states with one of the required full capacity chargers inoperable, demonstrate the OPERABILITY of its associated battery bank by performing Surveillance Requirement 4.8.2.3.2.a.1 within one hour. The action allows with an inoperable charger in Unit 2, the spare 2 – 7 charger to be substituted for an inoperable charger within 4 hours with no additional requirements specified. ITS LCO 3.8.4 Condition A states with one or two battery chargers on one train inoperable, restore battery terminal voltage to greater than or equal to the minimum established float voltage within 2 hours is specified by Required Action A.1. Required Action A.2 states a verification of float current of ≤ 2 amps is required once per 12 hours. Required Action A.3 specifies that the inoperable charger(s) must be restored to OPERABLE status within 7 days. This changes the Unit 2 CTS by deleting the allowance to substitute the 2-7 charger within 4 hours for a required charger.

The purpose of ITS 3.8.4 Required Actions A.1, A.2 and A.3 is to provide the appropriate actions to be taken when a charger becomes inoperable. This change is acceptable because the substitution of the spare charger within 4 hours may not ensure the OPERABILITY of the battery. Action A.2 requires the restoration of the battery terminal voltage to greater than or equal to the minimum established float voltage within 2 hours.

M.5 CTS surveillance requirement 4.8.2.3.1 requires the specified busses to be determined operable and energized by verifying correct breaker alignment and indicated power availability. ITS SR 3.8.9.1 requires verification of correct voltage and breaker alignments for the required buses. This changes the CTS by specifying the indicated bus voltage is the correct voltage.

The purpose of ITS SR 3.8.9.1 is to specify the required alignment and proper voltage for each required bus. This change is acceptable because the ITS SR 3.8.9.1 maintains the requirements for proper voltage and alignment for the required buses. The ITS SR specifies correct voltage which indicates a specified range. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as more restrictive because the ITS specifies correct voltage and the CTS does not.

Removed Detail Changes (LA)

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.8.2.3 requires the DC electrical equipment and busses to be OPERABLE. Each train of DC is specified in terms in DC busses, battery banks, and chargers. CTS Surveillance requirement 4.8.2.3.1 requires each of the DC trains to be OPERABLE and energized. The CTS LCO includes a list of the specific busses and equipment required OPERABLE. ITS LCO 3.8.4 simply states "The Train A and Train B DC electrical power subsystems shall be OPERABLE." ITS LCO 3.8.9 requires the Train A and B DC busses to be OPERABLE. The corresponding ITS LCOs do not include the CTS details describing the required busses or equipment. The CTS is revised to conform to the ITS. This changes the CTS by moving the details describing each train (orange and purple bus) including the specific DC busses, battery banks, and chargers) from the CTS LCO to the ITS 3.8.4 and 3.8.9 Bases as applicable.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirement for the Train A and B DC equipment to be OPERABLE in LCOs 3.8.4 and 3.8.9. These requirements ensure that the required DC buses (ITS 3.8.9), batteries, and chargers (ITS 3.8.4) are OPERABLE to support the required features. This change is acceptable because the removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.2 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* Unit 1 CTS surveillance requirement 4.8.2.3.2.a.2 states that each 125 volt battery bank and charger shall be demonstrated OPERABLE every 7 days with the battery on float charge the total battery terminal voltage is greater than or equal to 127.8

volts for 60 cell batteries 1-1 and 1-2 and 125.67 volts for 59 cell batteries 1-3 and 1-4. Unit 2 CTS surveillance requirement 4.8.2.3.2.a.2 requires that each 125-volt battery bank and charger shall be demonstrated OPERABLE every 7 days with the total battery terminal voltage greater than or equal to 127.8 volts on float charge. ITS SR 3.8.4.1 states "Verify battery terminal voltage is greater than or equal to the minimum established float voltage." The Frequency of the SR is every 7 days. This changes the CTS by moving the battery terminal voltage requirements from the specifications to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the surveillance requirement to verify battery terminal voltage is ≥ the minimum established float voltage. This change is acceptable because the removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.3 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS surveillance requirement 4.8.2.3.1 states that each D.C. bus train shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability. ITS SR 3.8.9.1 states "Verify correct breaker alignments and voltage to DC electrical power distribution subsystems." The Frequency of the SR is every 7 days. This changes the CTS by moving the term "energized" from the specification to the ITS Bases and changing the term "bus train" to the electrical power distribution subsystem.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still require the DC electrical power distribution subsystem to be OPERABLE. The surveillance requirement continues to verify correct breaker alignments and voltage to the DC electrical power distribution subsystems. The Bases for LCO 3.8.9 defines OPERABLE for the distribution systems as being "energized." This change is acceptable because the removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.4 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS surveillance requirement 4.8.2.3.2.c.4 states "The battery charger will supply at least 100 amperes at 140-volts for at least 4 hours." ITS SR 3.8.4.2 in part

when subjected to a performance discharge test. This changes the CTS by moving the definition of degradation from the specification to the ITS Bases.

The removal of these details for performing surveillance requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirement to perform a battery discharge test and the detection of battery degradation. This change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LA.7 Not used.

LA.8 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS surveillance requirement 4.8.2.3.2.b.3 states the average electrolyte temperature of every tenth cell of connected cells is above 60 °F. ITS SR 3.8.6.4 states "Verify each battery pilot cell temperature is greater than or equal to minimum established design limits." This changes the CTS by moving the temperature requirement from the surveillance to the ITS Bases and stating the temperature requirement as "the minimum established design limits." Other changes to the surveillance are discussed in a less restrictive change in these discussion of changes.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the temperature requirement for the batteries as the minimum established design limits. This change is acceptable because the removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.9 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* Unit 1 CTS Table 3.8 – 1 Note b states "Or battery charging current is less than (2) amps when on charge." A notation to the bottom of the table states" Numbers in parentheses assume a manufacturer's recommended full charge specific gravity of 1.215." ITS LCO 3.8.6 does not contain this information. This changes the CTS by moving the manufacturer's recommended full charge specific gravity from the specification to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health

and safety. The Technical Specifications still retain the 2-amp limit for the batteries to provide assurance of specific gravity requirements. This change is acceptable because the removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.10 *(Type 3 – Removing Procedural Details for Meeting TS Requirements and Related Reporting Requirements)* CTS surveillance requirement 4.8.2.3.2.b.2 requires there is no visible corrosion at either terminals or connectors, or the connector resistance of these items is less and than 150 micro-ohms. CTS surveillance requirement 4.8.2.3.2.c.1 states that the cell, cell plates, and battery racks show no visual indication of physical damage or abnormal deterioration. CTS surveillance requirement 4.8.2.3.2.c.2 requires the cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material. CTS surveillance requirement 4.8.2.3.2.c.3 states that the resistance of each cell-to-cell and terminal connection is less than or equal to 150 micro-ohms. ITS LCO 3.8.6 does not contain these surveillance requirements. This changes the CTS by moving these requirements from the specifications to the Licensing Requirements Manual (LRM).

The removal of these details for performing surveillance requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirements for the battery cell requirements and battery terminal voltage. These will ensure the batteries will be OPERABLE and capable of providing their required safety functions. This change is acceptable because these types of procedural details will be adequately controlled in the LRM. The LRM is incorporated by reference into the UFSAR and any changes to the LRM are made under 10 CFR 50.59, which ensures changes are properly evaluated. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LA.11 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS surveillance requirement 4.8.2.3.2.b.1 requires the parameters in Table 3.8–1 to meet the Category B limits. CTS in Table 3.8 – 1 lists the allowable value for electrolyte level as "above the top of plates." ITS SR 3.8.6.3 states "Verify each battery connected cell electrolyte level is greater than or equal to minimum established design limits." The ITS Bases for Action Condition C discusses electrolyte level operability requirements. This changes the CTS by moving the details regarding electrolyte level from the specification to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirement for electrolyte level. This ensure battery will remain OPERABLE. This change is acceptable because the

removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.12 *(Type 3 – Removing Procedural Details for Meeting TS Requirements and Related Reporting Requirements)* CTS Table 3.8-1lists the surveillance requirements for the battery. The Category A and Category B limits list electrolyte level with specifc requirements. ITS SR 3.8.6.3 states the requirement for electrolyte level is greater than or equal to minimum established design limits. This changes the CTS by moving information from the specification to the Battery Monitoring and Maintenance Program implementing document.

The removal of these details for performing surveillance requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirement for electrolyte level for the batteries. This change is acceptable because these types of procedural details will be adequately controlled by the requirements of a program required by ITS Section 5. The Battery Monitoring and Maintenance program is controlled by Section 5 of the Technical Specifications. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 CTS LCO 3.8.2.3 states "The following D.C. bus trains shall be energized and OPERABLE:" with Train "A" and Train "B" components specified. ITS LCO 3.8.4, "DC Sources – Operating" states "The A Train and B Train DC electrical power subsystems shall be OPERABLE. This changes the CTS by classifying the "trained" components into a subsystem.

The purpose of the ITS LCO is to group the parts of the DC trains into a category or subsystem. This change is acceptable because a DC subsystem contains all required components that are required for a Train of DC. The subsystem is described in the Bases and lists the components that are required to function for it to be considered OPERABLE. The technical requirements are not modified by this change. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.3 Unit 2 surveillance requirement 4.8.2.3.2.d requires a battery service test to be performed at least every 18 months*. The "*" specifies that the 18 month surveillance interval during the first fuel cycle may be extended to coincide with completion of the first refueling outage. ITS SR 3.8.4.3 states that a battery service test will be performed for each battery every 18 months. This changes the CTS by deleting the allowance for the first refueling period.

This change is acceptable because the first Unit 2 refueling outage was completed in 1989. Therefore, the allowance has expired and is no longer required in the Technical Specifications. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.4 CTS LCO 3.8.2.3 states the D.C. bus Train A and Train B shall be energized and OPERABLE. ITS LCO 3.8.9 requires the Train A and Train B DC electrical power distribution subsystems shall be OPERABLE. This changes the CTS by describing the DC bus train as the DC electrical power distribution subsystem.

This change is acceptable because a change in how the DC is described does not change the technical requirements for the system. The ITS Bases describe how the DC buses are arranged. The distribution system requirements define for the DC subsystem that being OPERABLE is being in an energized state. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.5 CTS LCO 3.8.2.3 Action a states "With one of the required battery banks inoperable, restore the inoperable battery bank to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours." ITS LCO 3.8.4 Condition B requires with one or two batteries on one train inoperable, restore the inoperable batteries to OPERABLE status within 2 hours. ITS LCO 3.8.4 Condition C states that with one DC electrical power subsystem inoperable for reasons other than Condition A or B, restore the DC subsystem to OPERABLE status within two hours. ITS LCO 3.8.4 Condition D specifies when the Required Action and associated Completion Time are not met, the unit will be in MODE 3 in six hours and MODE 5 in 36 hours. This changes the CTS by dividing the batteries requirements into specific requirements for the batteries and the DC subsystems.

This change is acceptable because the technical requirements for the DC systems remain unchanged. The CTS requirements for the DC batteries are provided with limits. The ITS requirements divides the requirements for the batteries into the requirements for the batteries and the electrical power subsystem. This change provides a clarification to the technical requirements for the DC system in the ITS format. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.6 CTS LCO 3.8.2.3 Action a states "With one of the required battery banks inoperable, restore the inoperable battery bank to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours." ITS LCO 3.8.9 Condition C requires with one or more DC electrical power subsystems inoperable, restore the DC electrical power distribution subsystem to OPERABLE status within 2 hours. ITS LCO 3.8.9 Condition D specifies with the Required Action and associated Completion Time not met, the unit must be placed in MODE 3 within six hours and in MODE 5 within 36 hours. This changes the CTS by stating the requirements for the DC sources in ITS terms.

This change is acceptable because the technical requirements for the DC systems remain unchanged. The CTS requirements for the DC batteries are provided with limits. The ITS requirements specifies the requirements for electrical power distribution subsystem. This change provides a clarification to the technical requirements for the DC system in the ITS format. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.7 CTS LCO 3.8.2.3 Action a in part states with one of the required battery banks inoperable, restore the inoperable battery bank to OPERABLE status within 2 hours. CTS surveillance requirements 4.8.2.3.2 requires the battery bank to meet the requirements listed in Table 3.8 – 1 for the battery cells. ITS 3.8.6 Action F states if the Required Action and associated Completion Time of Condition A, B, C, D, or E not met, or if one or two batteries on one train with one or more battery cells float voltage < 2.07 V and float current > 2 amps, declare associated battery inoperable immediately. This changes the CTS by stating the requirements in an ITS format.

The purpose of ITS Action F is to coordinate the battery cell and DC Source requirements. This change is acceptable because the technical requirements for the battery cell remain unchanged. Any technical changes to the battery cell parameters of DC Source requirements are addressed in separate discussion of changes. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.8 CTS LCO 3.8.2.3 states that DC bus trains (Train A and Train B) shall be energized and OPERABLE in MODES 1, 2, 3, and 4. ITS LCO 3.8.6 states "Battery parameters for Train A and Train B batteries shall be within limits." The Applicability for the LCO is stated as "When associated DC electrical power subsystems are required to be OPERABLE." A Note modifies the ITS Actions and states "Separate Condition entry is allowed for each battery." This changes the CTS by stating the requirements in an ITS format.

The purpose of 3.8.6 LCO and Applicability is to ensure the batteries are OPERABLE to support the required DC sources when the sources are required to be OPERABLE. The purpose of the Note to the Actions is to allow separate entry for each battery. This change is acceptable because the technical requirements for the battery cell remain unchanged. ITS LCO 3.8.4 is applicable in MODES 1, 2, 3 and 4 and requires two trains of DC power subsystems. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

CTS 3.8.2.4 AC Distribution – Shutdown
ITS 3.8.5 DC Sources – Shutdown
ITS 3.8.10 Distribution Systems – Shutdown
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.8.2.4 states as a minimum, one of the following trains of D.C. electrical equipment and busses shall be OPERABLE and energized in the specified manner. The LCO specifies Train A or Train B equipment be OPERABLE. Each train consists of two DC buses, batteries, and chargers. ITS LCO 3.8.5 states one DC subsystem shall be OPERABLE. LCO 3.8.10 states the necessary portion of DC electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE. This changes the CTS by allowing DC buses that are necessary to support equipment to provide required safety functions.

The purpose of ITS LCO 3.8.10 is to ensure the necessary equipment is powered from OPERABLE electrical power systems. This change is acceptable because the LCO requirements continue to ensure that the required systems and components are maintained consistent with the safety analyses and licensing basis. This change allows a combination of OPERABLE electrical power subsystems to supply the electrical power to the necessary safety systems and equipment. During the movement of irradiated fuel and During movement of fuel over irradiated fuel assemblies for Unit 1, During the movement of recently irradiated fuel and During the movement of fuel over recently irradiated fuel assemblies for Unit 2, or with the unit in MODES 5 and 6, the electrical sources and the electrical distribution systems are limited. Required equipment may be electrically power from other than its normal source by cross connections of trains. This change is acceptable under the stated conditions because assuming a single failure and concurrent loss of all offsite or all onsite power is not required. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L.2 *(Category 4 – Relaxation of Required Action)* CTS 3.8.2.4 Action in part states: With the above required train of D.C. electrical equipment and busses not fully OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies for Unit 1, and movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies for Unit 2," perform specific actions until the required minimum equipment is restored. ITS 3.8.5 and 3.8.10 Action A.1 states "Declare affected required feature(s) inoperable." This *must be performed immediately, or other specific Required Actions must be followed.* This changes the CTS by providing alternative actions to suspending CORE ALTERATIONS, movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies for Unit 1, and movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.8.2.4 requires the DC electrical equipment and busses to be OPERABLE and energized in a specific manner. Each train of DC is specified in terms of DC busses, battery banks, and chargers. CTS Surveillance requirement 4.8.2.4.1 requires the DC train to be OPERABLE and energized. Unit 2 CTS LCO 3.8.2.4 states that a spare charger may substitute for any inoperable charger or a charger removed from service for maintenance (* footnote). ITS LCO 3.8.5 states "One DC electrical power subsystem shall be OPERABLE." This changes the CTS by moving the OPERABILITY requirements for the train, buses, battery banks, and chargers (including the * footnote) from the specifications to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirement for the DC subsystem to be OPERABLE in LCO 3.8.5 and LCO 3.8.10 ensures the required subsystem is energized. These requirements ensure that the required DC buses, batteries, and chargers are OPERABLE to support the required features. This change is acceptable because the removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 CTS LCO 3.8.2.4 requires the DC electrical equipment and busses to be OPERABLE and energized in a specific manner. Each train of DC is specified in terms in DC busses,

battery banks, and chargers. ITS LCO 3.8.5 states "One DC electrical power subsystem shall be OPERABLE." This changes the CTS by stating the requirement in terms of a subsystem instead of individual components.

The purpose of the ITS LCO requirement is to state the requirement in the term of a subsystem rather than the individual components. This change is acceptable because the technical requirements for the DC remains unchanged from the CTS requirements. The ITS LCO specification and Bases retain all specific technical requirements and ensure OPERABILITY of the required DC system and components. The ITS requirement is consistent with the ISTS wording for this requirement. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.3 CTS LCO 3.8.2.4 requires the DC electrical equipment and busses to be OPERABLE and energized in a specific manner. Each train of DC is specified in terms of DC busses, battery banks, and chargers. ITS LCO 3.8.10 requires the necessary equipment to provide the required safety functions. This changes the CTS by addressing the DC distribution requirement as the Power Distribution System requirements.

The purpose of the ITS LCO 3.8.10 requirement is to state the requirement in the term of distribution system rather than the individual components. This change is acceptable because the technical requirements for the DC distribution system remain unchanged from the CTS requirements. The ITS LCOs 3.8.5 and 3.8.10 specifications and Bases retain all specific technical requirements and ensure OPERABILITY of the required DC system. The ITS requirement is consistent with the ISTS wording for this requirement. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.4 CTS LCO 3.8.2.4 requires the DC electrical equipment and busses to be OPERABLE and energized in a specific manner. The Unit 1 applicability states "During movement of irradiated fuel assemblies, and During movement of fuel assemblies over irradiated fuel assemblies." The Unit 2 applicability states "During movement of recently irradiated fuel assemblies, and During movement of fuel assemblies over recently irradiated fuel assemblies." ITS LCOs 3.8.5 "DC Sources – Shutdown," and 3.8.10, "Distribution Systems – Shutdown," state the Applicability as "During movement of irradiated fuel assemblies and During movement of fuel assemblies over irradiated fuel for Unit 1, and During movement of recently irradiated fuel assemblies and During movement of fuel assemblies over recently irradiated fuel for Unit 2." This changes the CTS by combining the applicability of ITS into a requirement for each unit.

This change is acceptable because the ITS technical requirement for LCO applicability remains unchanged from the CTS requirement. The ITS requirement retains the specific requirements for each unit. The change in wording does not modify the technical requirement for the CTS. The ITS requirement is consistent with the ISTS wording for this requirement with unit specific difference noted. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.5 Unit 1 LCO 3.8.2.4 Action in part states, "during movement of irradiated fuel assemblies and, during movement of fuel assemblies over irradiated fuel assemblies." Unit 2 LCO 3.8.2.4 Action in part states, "During movement of recently irradiated fuel assemblies and, During movement of fuel assemblies over recently irradiated fuel assemblies." ITS LCOs 3.8.5 and 3.8.10 Action A.2.2 states "During movement of irradiated fuel

assemblies and, During movement of fuel assemblies over irradiated fuel assemblies" for Unit 1. ITS LCOs 3.8.5 and 3.8.10 Action A.2.3 states "During movement of recently irradiated fuel assemblies and, During movement of fuel assemblies over recently irradiated fuel assemblies" for Unit 2. This changes the CTS by combining the Actions of LCOs 3.8.5 and 3.8.10 into a requirement for each unit.

This change is acceptable because the ITS technical requirement for LCO Actions remains unchanged from the CTS requirement. The ITS requirement retains the specific requirements for each unit. The change in wording does not modify the technical requirement for the CTS. The ITS requirement is consistent with the ISTS wording for this requirement with unit specific difference noted. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.6 CTS surveillance requirement 4.8.2.4.1 states "The above required 125-volt D.C. bus train shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability." ITS SR 3.8.10.1 requires the verification of correct breaker alignments and voltage to required DC electrical power distribution subsystems. This changes the CTS by specifying that each required DC subsystem has the correct voltage for each of the required buses.

The purpose of ITS SR 3.8.10.1 is to specify proper voltage is supplied for each required DC subsystem. This change is acceptable because the ITS SR 3.8.10.1 maintains the requirements for proper voltage for each required DC subsystem. This change retains the technical requirements for the required electrical power distribution subsystems. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as administrative because it does not result in a technical change to the CTS.

A.7 CTS 4.8.2.4.2 states the required 125-volt battery bank and chargers shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2. ITS SR 3.8.5.1 requires for the DC sources that must be OPERABLE, the following SRs are applicable. The SRs listed are: SR 3.8.4.1, SR 3.8.4.2, and SR 3.8.4.3. The Frequency of the required SRs is in accordance with the applicable SRs. This changes the CTS by stating the applicable surveillance requirements in terms of the ITS surveillance requirements and frequency.

The purpose of ITS SR 3.8.5.1 is to specify associated SRs that are applicable to the DC subsystem in a shutdown condition. This change is acceptable because the ITS SR 3.8.5.1 maintains the requirements for the DC subsystem. Changes to the ITS SRs for DC Sources – Operating are address in another CTS section. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as administrative because it does not result in a technical change to the CTS.

CHANGE NO. 8

UPDATE OF BASES BACKGROUND INFORMATION FOR ITS 3.4.10

ITS 3.4.10, Safety Valves, Bases Background Section discusses the relief capacity of the Safety Valves. The Unit 1 safety valve relief capacity is currently stated as 467,100 lbm/hr in the background information. Based on more recent information from the Unit 1 Uprate project (LAR no. 302), the referenced Unit 1 safety valve relief capacity is revised to 345,000 lbm/hr. As the BVPS ITS conversion LAR will be implemented after the Unit 1 uprate is implemented, the information in the ITS conversion documentation is updated to reflect uprate plant conditions and applicable analyses. This change affects the large insert in the first page of the ITS 3.4.10 Bases. The replacement page is annotated at the top to identify the page as Revision 1 to the February 28, 2005 (date of NRC receipt) submittal.

NOTE: THE PAGE NUMBER IS REFERENCED FROM THE LOWER RIGHT CORNER PAGE NUMBER ANNOTATED IN BOLD TEXT.

<u>ITS 3.4.10 BASES REPLACEMENT PAGE</u>

135

B 3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.10 Pressurizer Safety Valves

1

The Unit 1 pressurizer safety valves are totally enclosed, pilot-actuated, self-actuated valves. The Unit 2

BASES

1

BACKGROUND

The pressurizer safety valves provide, in conjunction with the Reactor Protection System, overpressure protection for the RCS. ~~The~~ pressurizer safety valves are totally enclosed pop type, spring loaded, self actuated valves with backpressure compensation. The safety valves are designed to prevent the system pressure from exceeding the system Safety Limit (SL), ~~[~~2735~~]~~ psig, which is 110% of the design pressure.

is 345,000 lbm/hr (Unit 1) and 378,200 lbm/hr (Unit 2). The capacity of the pressurizer safety valves is based on the valve geometry. The pressurizer safety valve capacity is used in the analysis of the complete loss of steam flow to the turbine event, to demonstrate that the capacity is sufficient to maintain RCS pressure below 110% of the design pressure.

Because the safety valves are totally enclosed and self actuating, they are ~~considered independent components. The relief capacity for each valve, [380,000] lb/hr, is based on postulated overpressure transient conditions resulting from a complete loss of steam flow to the turbine. This event results in the maximum surge rate into the pressurizer, which specifies the minimum relief capacity for the safety valves.~~ The discharge flow from the pressurizer safety valves is directed to the pressurizer relief tank. This discharge flow is indicated by an increase in temperature downstream of the pressurizer safety valves or increase in the pressurizer relief tank temperature or level.

the enable

1

Overpressure protection is required in MODES 1, 2, 3, 4, and 5; however, in MODE 4, with one or more RCS cold leg temperatures ≤ ~~[275°F]~~ ~~[Low Temperature Overpressure Protection (LTOP) arming~~ temperature specified in the PTLR], and MODE 5 and MODE 6 with the reactor vessel head on, overpressure protection is provided by operating procedures and by meeting the requirements of LCO 3.4.12, "~~Low Temperature~~ Overpressure Protection ~~(LTOP)~~ System~~.~~ s (OPPS)."

1

The 1% ASME tolerance requirement is met by assuring the as left lift setting is within 1% of 2485 psig.

4

~~The upper and lower pressure limits are based on the ± 1% tolerance requirement (Ref. 1) for lifting pressures above 1000 psig.~~ The lift setting is for the ambient conditions associated with MODES 1, 2, and 3. This requires either that the valves be set hot or that a correlation between hot and cold settings be established.

The pressurizer safety valves are part of the primary success path and mitigate the effects of postulated accidents. OPERABILITY of the safety valves ensures that the RCS pressure will be limited to 110% of design pressure. The consequences of exceeding the American Society of Mechanical Engineers (ASME) pressure limit (Ref. 1) could include damage to RCS components, increased leakage, or a requirement to perform additional stress analyses prior to resumption of reactor operation.

REVISION 1 TO BEAVER VALLEY POWER STATION (BVPS) UNIT 1 AND UNIT 2 IMPROVED TECHNICAL SPECIFICATION (ITS) CONVERSION LICENSE AMENDMENT REQUEST (LAR) NOS. 296 (UNIT 1) AND 169 (UNIT 2)

CHANGE NO. 9

UPDATE OF ITS CONVERSION LAR DOCUMENTATION IN VOLUME 1

Volume 1 contains information that describes the BVPS ITS conversion submittal. Included in Volume 1 are references to the outstanding BVPS LARs at the time the ITS conversion documentation was submitted for review. The following revised pages update the Volume 1 references to outstanding BVPS LARs to reflect the current status (i.e., changes 1 through 7 described previously). Two Sections of Volume 1 are affected by the changing LAR status. Revised pages are provided for both the "LAR Status" section and the "CTS Roadmap" section.

VOLUME 1 "LAR STATUS" SECTION REPLACEMENT PAGES

Replace existing pages 2 through 4 with new pages 2 through 5

VOLUME 1 "CTS ROADMAP" SECTION REPLACEMENT PAGES

Replace existing pages 1 through 17 with new pages 1 through 17

Unit 1 LAR #	Unit 2 LAR #	LAR Description and Status	ISTS Conversion Documentation Status
	184	Unit 2 Response Time Testing. Allows response time to be verified by other means than performing a test. Includes a bases change. LAR is consistent with the guidance provided in WCAP-13632-P-A and WCAP-14036-P-A Submitted by letter dated July 23, 2004. **LAR No.184 was approved by the NRC in Unit 2 license amendment No. 147 issued March 24, 2005 (TAC No. MC3894).**	Approved changes incorporated and pages updated with new amendment number in Revision 1.
306	176	Emergency Diesel Generator Allowed Outage Time extension to 14 days. A risk informed LAR. Submitted by letter dated May 26, 2004. **LAR Nos. 306 and 176 were approved by the NRC in license amendment Nos. 268 (Unit 1) and 150 (Unit 2) issued September 29, 2005 (TAC Nos. MC3331 and MC3332).**	Approved changes incorporated and pages updated with new amendment number in Revision 1.
309	181	Channel Functional Test Surveillance interval extension for undervoltage relays and RWST level. Based on the NRC approved methodology in WCAP-10271. Submitted by letter dated June 2, 2004. **LAR Nos. 309 and 181 were approved by the NRC in license amendment Nos. 267 (Unit 1) and 149 (Unit 2) issued September 19, 2005 (TAC Nos. MC3404 and MC3405).**	Approved changes incorporated and pages updated with new amendment number in Revision 1.

Unit 1 LAR #	Unit 2 LAR #	LAR Description and Status	ISTS Conversion Documentation Status
326	177	Unit 2 Capsule W & Overpressure Protection System changes. Also improves consistency of TS requirements for low temperature overpressure protection between units and with the ISTS. Submitted by letter dated June 1, 2004. **LAR Nos. 326 and 177 were approved by the NRC in license amendment Nos. 265 (Unit 1) and 146 (Unit 2) issued March 11, 2005 (TAC Nos. MC3375 and MC3376).**	Approved changes incorporated and pages updated with new amendment number in Revision 1.
329	198	Deletion of Monthly Operating Report & Occupational Radiation Exposure Report (TST-369 CLIIP) Submitted by letter dated February 22, 2005. **LAR Nos. 329 and 198 were approved by the NRC in license amendment Nos. 266 (Unit 1) and 148 (Unit 2) issued July 28, 2005 (TAC Nos. MC6176 and MC 6177).**	Approved changes incorporated and pages updated with new amendment number in Revision 1.
314	187	Post Accident Monitoring Instrumentation (PAM) Revision. Update PAM instrumentation requirements consistent with guidance of WCAP-15981, Post Accident Monitoring Instrumentation Re-Definition for Westinghouse NSSS Plants." The WCAP was submitted to the NRC 9/17/04. Submitted by letter dated February 22, 2005. **LARs 314 and 187 were withdrawn by FENOC letter dated May 11, 2005.**	Affected ITS conversion documentation revised to reflect withdrawal of LARs 314 and 187 in Revision 1.

Unit 1 LAR #	Unit 2 LAR #	LAR Description and Status	ISTS Conversion Documentation Status
302	173	Extended Power Uprate. 2689 MWt to 2900 MWt rated Thermal Power. This LAR includes the elimination of the Unit 1 TS (3.5.4.1.1) that addresses Boron Injection Tank (BIT) volume and boron concentration requirements applicable in Modes 1-3. Therefore, this Unit 1 TS is not shown in the BVPS conversion documentation for Section 3.5. Unit 2 does not have a corresponding BIT TS. Submitted by letter dated October 4, 2004.	Draft pages incorporated.
310	182	Constant Axial Offset Control (CAOC) to Relaxed Axial Offset Control (RAOC). Also incorporates changes to conform more closely to corresponding ISTS requirements. Submitted by letter dated February 11, 2005.	Draft pages incorporated.
317	190	Containment Atmospheric Conversion. Proposes changes to convert the subatmospheric containment TS requirements to more closely conform to atmospheric containment TS requirements. Submitted by letter dated June 2, 2004.	Draft pages incorporated.
318	191	Best Estimate Loss of Coolant Accident (BELOCA). Consistent with WCAP-12945-P-A. Submitted by letter dated October 4, 2004.	Draft pages incorporated.

Unit 1 LAR #	Unit 2 LAR #	LAR Description and Status	ISTS Conversion Documentation Status
325	195	Control Room Emergency Ventilation System (CREVS) Revision of current requirements to make the BVPS requirements consistent between Units and to conform more closely to the corresponding ISTS (Rev. 3) requirements. Adds new TS 3.7.6 to address Control Room Emergency Air Cooling System (CREACS). Revises U1 Applicability for control room radiation monitors to be consistent with U2 (i.e., required for recently irradiated fuel movement instead of any irradiated fuel movement). Submitted by letter dated February 17, 2005.	Draft pages incorporated.
327	197	Revise Unit 1 & 2 SG Low Level Reactor Trip and ESFAS Allowable values and Unit 2 ESFAS SG level high allowable value. The pages containing the Unit 1 SG Low Level value changed by this LAR are superceded by value used in the uprate LAR (#302). Submitted by letter dated October 5, 2004.	Draft pages incorporated.
	202	This change eliminates the Technical Specification references to the Unit 2 rectifiers. The resulting Technical Specifications will only refer to battery chargers instead of both rectifiers and chargers. Submitted by letter dated October 14, 2005 and approval has been requested prior to the implementation of the BVPS ITS conversion License Amendment.	Draft pages incorporated.

BVPS UNIT 1 AND UNIT 2
CURRENT TECHNICAL SPECIFICATIONS (CTS) ROADMAP
LISTED IN CTS ORDER

NOTES:

1. Each CTS and BVPS Improved Technical Specification (ITS) listed below is common to both units unless identified as unit specific.
2. Unit 1 CTS pages are only included in the CTS markups when a technical difference exists between the Unit 1 page and the Unit 2 page.
3. Each marked-up CTS page in the submittal affected by an outstanding License Amendment Request (LAR) is clearly identified as a draft page with the applicable LAR number(s) referenced.

CTS SECTION 1.0 DEFINITIONS

CTS (1.0)	BVPS ITS (1.1)	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
Defined Terms	Section 1.1 Note	Retained in ITS Section 1.1 as a Note.	
Thermal Power	Thermal Power		
Rated Thermal Power	Rated Thermal Power		Draft pages utilized from LAR #s 302 (Unit 1) and 173 (Unit 2).
Operational Mode	Mode		
Action	Actions		
Operable - Operability	Operable - Operability		
Reportable Event	N/A	Not used in ITS.	
Containment Integrity	N/A	Not used in ITS.	
Channel Calibration	Channel Calibration		
Channel Check	Channel Check		
Channel Functional Test	Channel Operational Test & Trip Actuating Device Operational Test		
Core Alteration	Core Alteration		

CTS SECTION 1.0 DEFINITIONS

CTS (1.0)	BVPS ITS (1.1)	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
Shutdown Margin	Shutdown Margin		
Leakage	Leakage		
Quadrant Power Tilt Ratio	Quadrant Power Tilt Ratio		
Dose Equivalent I-131	Dose Equivalent I-131		
Staggered Test Basis	Staggered Test Basis		
Frequency Notation	N/A	Not used in ITS.	
Reactor Trip System Response Time	Reactor Trip System Response Time		
Engineered Safety Feature Response Time	Engineered Safety Feature Response Time		
Axial Flux Difference	Axial Flux Difference		
Physics Tests	Physics Tests		
$\overline{E}$ - Average Disintegration Energy	$\overline{E}$ - Average Disintegration Energy		
Source Check	N/A	Not used in ITS.	
Process Control Program	N/A	Not used in ITS.	
Offsite Dose Calculation Manual (ODCM)	5.5.1 Offsite Dose Calculation Manual (ODCM)	Moved to Section 5.0 of ITS.	
Gaseous Radwaste Treatment System	N/A	Not used in ITS.	
Ventilation Exhaust Treatment System	N/A	Not used in ITS.	
Purge-Purging	N/A	Not used in ITS.	

CTS SECTION 1.0 DEFINITIONS

CTS (1.0)	BVPS ITS (1.1)	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
Venting	N/A	Not used in ITS.	
Major Changes	N/A	Not used in ITS.	
Member(s) Of The Public	N/A	Not used in ITS.	
Core Operating Limits Report	Core Operating Limits Report		
Pressure And Temperature Limits Report (PTLR)	Pressure And Temperature Limits Report (PTLR)		
Table 1.1 Operational Modes	Table 1.1 Modes		
Table 1.2 Frequency Notation	N/A	Not used in ITS.	

CTS SECTION 2.1 SAFETY LIMITS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
2.1.1 Reactor Core	2.1.1 Reactor Core SLs		Draft page utilized from LAR #s 302 (Unit 1) and 173 (Unit 2).
2.1.2 Reactor Coolant System Pressure	2.1.2 Reactor Coolant System Pressure SL		

CTS SECTION 3/4.0 APPLICABILITY

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.0 Applicability	3.0 Limiting Condition For Operation (LCO) Applicability 3.0 Surveillance Requirement (SR) Applicability		

CTS SECTION 3/4.1 REACTIVITY CONTROL SYSTEMS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.1.1.1 SHUTDOWN MARGIN --T_{avg} > 200°F	3.1.1 Shutdown Margin 3.1.2 Core Reactivity	CTS Surveillance 4.1.1.1.2 was expanded into a separate specification for core reactivity (3.1.2) in the ITS.	
3/4.1.1.2 SHUTDOWN MARGIN - T_{avg} ≤ 200°F	3.1.1 Shutdown Margin	Both CTS Shutdown Margin specifications are combined in a single ITS 3.1.1.	
3/4.1.1.3 Boron Dilution	N/A	Relocated to the Licensing Requirements Manual (LRM).	
3/4.1.1.4 Moderator Temperature Coefficient (MTC)	3.1.3 Moderator Temperature Coefficient (MTC)		
3/4.1.1.5 Minimum Temperature for Criticality	3.4.2 RCS Minimum Temperature for Criticality	CTS moved to Section 3.4 (RCS) in the ITS. Changes to the CTS are shown in Section 3.4.	
3/4.1.2.8 Refueling Water Storage Tank	3.5.4 Refueling Water Storage Tank (RWST)	CTS moved to Section 3.5 (ECCS) in the ITS. Changes to the CTS are shown in Section 3.5.	Draft page utilized from LAR #s 302 (Unit 1) and 173 (Unit 2).
3/4.1.2.9 Isolation of Unborated Water Sources - Shutdown	3.1.8 Unborated Water Source Isolation Valves	BVPS specific CTS applicable in Modes 4, 5 and 6. The proposed ITS is based on ISTS 3.9.2, Unborated Water Source Isolation Valves but retained in Section 3.1 consistent with the CTS since it is applicable in Modes other than Mode 6.	
3/4.1.3.1 Group Height	3.1.4 Rod Group Alignment Limits		
3/4.1.3.2 Position Indication Systems - Operating	3.1.7.1 Unit 1 Rod Position Indication 3.1.7.2 Unit 2 Rod Position Indication	Due to design differences (Unit 1 Analog System and Unit 2 Digital System) and other CTS differences, separate unit specific specifications are proposed.	
3/4.1.3.4 Rod Drop Time	3.1.4 Rod Group Alignment Limits	CTS requirements incorporated into ITS 3.1.4 as SR 3.1.4.3.	

CTS SECTION 3/4.1 REACTIVITY CONTROL SYSTEMS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.1.3.5 Shutdown Rod Insertion Limit	3.1.5 Shutdown Bank Insertion Limits		
3/4.1.3.6 Control Rod Insertion Limit	3.1.6 Control Bank Insertion Limits		

CTS SECTION 3/4.2 POWER DISTRIBUTION LIMITS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.2.1 Axial Flux Difference (AFD)	3.2.3 Axial Flux Difference (AFD)		**Draft pages** utilized from LAR #s 310 (Unit 1) and 182 (Unit 2).
3/4.2.2 Heat Flux Hot Channel Factor F_Q (Z)	3.2.1 Heat Flux Hot Channel Factor (F_Q(Z))		**Draft pages** utilized from LAR #s 310 (Unit 1) and 182 (Unit 2).
3/4.2.3 Nuclear Enthalpy Hot Channel Factor ($F^N_{\Delta H}$)	3.2.2 Nuclear Enthalpy Rise Hot Channel Factor ($F^N_{\Delta H}$)		**Draft pages** utilized from LAR #s 310 (Unit 1) and 182 (Unit 2).
3/4.2.4 Quadrant Power Tilt Ratio	3.2.4 Quadrant Power Tilt Ratio (QPTR)		**Draft pages** utilized from LAR #s 310 (Unit 1) and 182 (Unit 2).
3/4.2.5 DNB Parameters	3.4.1 RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits	CTS moved to Section 3.4 (RCS) in the ITS. Changes to the CTS are shown in Section 3.4.	

CTS SECTION 3/4.3 INSTRUMENTATION

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.3.1 Reactor Trip System Instrumentation	3.3.1 RTS Instrumentation 3.3.8 Boron Dilution Detection Instrumentation	The RTS requirements are in Section 3.3A of the BVPS conversion documentation. Source Range Indication only requirements moved to ITS 3.3.8 in Section 3.3B of BVPS conversion documentation. Changes to the Source Range Indication requirements are shown in Section 3.3B.	**Draft pages** utilized from LAR #s 302 (Unit 1) and 173 (Unit 2). **Draft pages** utilized from LAR # 197 (Unit 2). **Draft pages** utilized from LAR #s 310 (Unit 1) and 182 (Unit 2).
3/4.3.2 Engineered Safety Feature Actuation System Instrumentation	3.3.2 ESFAS Instrumentation 3.3.5 Loss of Power LOP DG Start and Bus Separation Instrumentation	Section 3.3C of BVPS conversion documentation. ESF bus undervoltage relays moved to ITS 3.3.5 in Section 3.3B of the conversion documentation.	**Draft pages** utilized from LAR #s 317 (Unit 1) and 190 (Unit 2). **Draft pages** utilized from LAR 197 (Unit 2). **Draft pages** utilized from LAR # 302 (Unit 1).
3/4.3.3.1 Radiation Monitoring	3.3.6 **Unit 2** ITS 3.3.6 Containment Purge and Exhaust Isolation Instrumentation ITS 3.3.7, Control Room *Emergency Ventilation System* (CREVS) Instrumentation ITS 3.4.15, RCS Leakage Detection Instrumentation	Section 3.3B of BVPS conversion documentation. **Unit 1** requirements for the Containment Purge and Exhaust Isolation Radiation Monitors are **Relocated** to the Unit 1 LRM.	**Draft pages** utilized from LAR # 325 (Unit 1).
3/4.3.3.5 Remote Shutdown Instrumentation	3.3.4 Remote Shutdown Instrumentation	Section 3.3B of BVPS conversion documentation.	
3/4.3.3.8 Post Accident Monitoring (PAM) Instrumentation	3.3.3 Post Accident Monitoring (PAM) Instrumentation	Section 3.3B of BVPS conversion documentation.	

CTS SECTION 3/4.4 REACTOR COOLANT SYSTEM (RCS)

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.4.1.1 RCS Loops - Normal Operation	3.4.4 RCS Loops - Modes 1 and 2		
3/4.4.1.2 RCS Loops - Hot Standby	3.4.5 RCS Loops - Mode 3		
3/4.4.1.3 RCS Loops - Shutdown	3.4.6 RCS Loops - Mode 4 3.4.7 RCS Loops Mode 5, Loops Filled 3.4.8 RCS Loops Mode 5, Loops Not Filled		**Draft page** utilized from Unit 1 LAR # 302.
3/4.4.1.4.1 Loop Isolation Valves - Operating	3.4.17 RCS Loop Isolation Valves		
3/4.4.1.5 Isolated Loop Startup	3.4.18 RCS Isolated Loop Startup		
3/4.4.3 Safety Valves	3.4.10 Pressurizer Safety Valves		**Draft pages** utilized from Unit 2 LAR # 173. **Draft page** utilized from Unit 1 LAR # 302.
3/4.4.4 Pressurizer	3.4.9 Pressurizer		
3/4.4.5 Steam Generators	5.5.5 Steam Generator (SG) Tube Surveillance Program SR 3.4.13.2	CTS surveillance requirements moved to ITS Section 5.5.5.1 (Unit 1) and 5.5.5.2 (Unit 2). Detailed markup of both Units requirements in Section 5.0. Requirement to meet the Section 5 Program retained in ITS 3.4.13 as SR 3.4.13.2.	**Draft pages** utilized from LAR #s 302 (Unit 1) and 173 (Unit 2). See Section 5.0 markups for affected pages.
3/4.4.6.1 Leakage Detection Instrumentation	3.4.15 RCS Leakage Detection Instrumentation	Applicable pages from 3/4.3.3.1 Radiation Monitoring (as modified by Unit 2 LAR 187) are included in Section 3.4 to show addition of Rad Monitors.	
3/4.4.6.2 Operational Leakage	3.4.13 RCS Operational Leakage		
3/4.4.6.3 Pressure Isolation	3.4.14 RCS Pressure Isolation		

CTS SECTION 3/4.4 REACTOR COOLANT SYSTEM (RCS)

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
Valves	Valve (PIV) Leakage		
3/4.4.8 Specific Activity	3.4.16 RCS Specific Activity	Unit 1 LAR # 302 makes the Unit 1 specific activity limit the same as Unit 2. Therefore, with no other difference, the Unit 1 pages are not included in the BVPS conversion documentation.	Unit 1 LAR # 302.
3/4.4.9.1 RCS Pressure Temperature Limits	3.4.3 RCS Pressure and Temperature (P/T) Limits		
3/4.4.9.3 Overpressure Protection Systems	3.4.12 Overpressure Protection Systems (OPPS)		
3/4.4.11 Relief Valves	3.4.11 Pressurizer Power Operated Relief Valves (PORVs)		

CTS SECTION 3/4.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.5.1 Accumulators	3.5.1 Accumulators		**Draft pages utilized from LAR #s 302 (Unit 1) and 173 (Unit 2).**
3/4.5.2 ECCS Subsystems - $T_{avg} \geq 350°F$	3.5.2 ECCS - Operating		**Draft pages from Unit 1 LAR # 302.**
3/4.5.3 ECCS Subsystems - $T_{avg} < 350°F$	3.5.3 ECCS - Shutdown		**Draft pages from Unit 1 LAR # 302.**
3/4.5.4 Seal Injection Flow **(Unit 2)**	*3.5.5 Seal Injection Flow*		**Draft pages from Unit 2 LAR # 173.**

CTS SECTION 3/4.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.5.4.1.1 Boron Injection Tank ≥ 350°F **(Unit 1)**	N/A	This Unit 1CTS is deleted in uprate LAR # 302. Therefore, this CTS is not included in the BVPS conversion documentation.	Unit 1 LAR # 302.
3/4.5.1.2 Boron Injection Tank < 350°F **(Unit 1)**	3.4.12 Overpressure Protection Systems (OPPS)	Unit 1 LAR # 302 revises and renames the CTS to "3/4.5.4 HHSI Flow Path." As the requirements of this Unit 1 CTS are for low temperature overpressure protection, the requirements are moved to ITS 3.4.12. Changes to the CTS are shown in Section 3.4.	**Draft pages** from Unit 1 LAR # 302.
3/4.5.5 Seal Injection Flow **(Unit 1)**	3.5.5 Seal Injection Flow	Uprate LAR #s 302 (Unit 1) and 173 (Unit 2) make the Unit 1 and Unit 2 CTS requirements for Seal Injection Flow the same. Therefore, this Unit 1 CTS is not included in the BVPS conversion documentation.	Unit 1 LAR # 302.

CTS SECTION 3/4.6 CONTAINMENT SYSTEMS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.6.1.1 Containment Integrity	3.6.1 Containment	CTS valve surveillance moved to ITS 3.6.3.	
3/4.6.1.2 Containment Leakage	N/A	CTS replaced by requirements in ITS 3.6.1 and the containment leakage rate testing program.	
3/4.6.1.3 Containment Air Locks	3.6.2 Containment Air Locks	CTS requirements for air lock door leakage moved into ITS 5.5.12, "Containment Leakage Rate Testing Program." Changes to these requirements are shown in Section 5.0 of the conversion documentation.	
3/4.6.1.4 Internal Pressure	3.6.4 Containment Pressure	Although BVPS was originally designed with a subatmospheric containment, LAR #s 317/190 make	**Draft pages** utilized from LAR #s 317 (Unit 1) and 190 (Unit 2).

CTS SECTION 3/4.6 CONTAINMENT SYSTEMS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
		the temperature and pressure requirements close to an atmospheric containment. Therefore, the ISTS atmospheric temperature and pressure requirements were selected for the BVPS specific ITS.	
3/4.6.1.5 Air Temperature	3.6.5 Containment Air Temperature	Although BVPS was originally designed with a subatmospheric containment, LAR #s 317/190 make the temperature and pressure requirements close to an atmospheric containment. Therefore, the ISTS atmospheric temperature and pressure requirements were selected for the BVPS specific ITS.	**Draft pages** utilized from LAR #s 317 (Unit 1) and 190 (Unit 2).
3/4.6.1.6 Containment Structural Integrity	N/A	CTS replaced by requirements in ITS 3.6.1 and the containment leakage rate testing program.	
3/4.6.2.1 Containment Quench Spray System	3.6.6 Quench Spray System		
3/4.6.2.2 Containment Recirculation Spray System	3.6.7 Recirculation Spray System		
3/4.6.2.3 Chemical Addition System	3.6.8 Spray Additive System		**Draft pages** utilized from Unit 1 LAR # 317.
3/4.6.3 Containment Isolation Valves	3.6.3 Containment Isolation Valves		**Draft pages** utilized from LAR #s 317 (Unit 1) and 190 (Unit 2).

CTS SECTION 3/4.7 PLANT SYSTEMS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.7.1.1 Main Steam Safety Valves (MSSVs)	3.7.1 Main Steam Safety Valves (MSSVs)		Draft pages utilized from LAR #s 302 (Unit 1) and 173 (Unit 2).
3/4.7.1.2 Auxiliary Feedwater System	3.7.5 Auxiliary Feedwater (AFW) System		
3/4.7.1.3 Primary Plant Demineralized Water (PPDW)	3.7.6 Condensate Storage Tank (CST)		Draft pages utilized from LAR #s 302 (Unit 1) and 173 (Unit 2).
3/4.7.1.4 Activity	3.7.13 Secondary Specific Activity	Unit 1 LAR # 302 makes the Unit 1 specific activity limit the same as Unit 2. Therefore, with no other difference, the Unit 1 pages are not included in the BVPS conversion documentation.	Unit 1 LAR # 302.
3/4.7.1.5 Main Steam Isolation Valves	3.7.2 Main Steam Isolation Valves (MSIVs)		
3/4.7.3 Component Cooling Water System (Unit 1) 3/4.7.3 Primary Component Cooling Water System (Unit 2)	3.7.7 Component Cooling Water (CCW) System		
3/4.7.4 Reactor Plant River Water System (Unit 1) 3/4.7.4 Service Water System (Unit 2)	3.7.8 Service Water System (SWS)		
3/4.7.5 Ultimate Heat Sink - Ohio River	3.7.9 Ultimate Heat Sink (UHS)		
3/4.7.6 Control Room Emergency Air Cooling System (CREACS)	3.7.11 Control Room Emergency Air Cooling System (CREACS)		Draft pages utilized from LAR #s 325 (Unit 1) and 195 (Unit 2).
3/4.7.7 Control Room Emergency Ventilation System (CREVS)	3.7.10 Control Room Emergency Ventilation System (CREVS)		Draft pages utilized from LAR #s 325 (Unit 1) and 195 (Unit 2).

CTS SECTION 3/4.7 PLANT SYSTEMS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.7.8 Supplemental Leak Collection and Release System (SLCRS)	N/A	This CTS is applicable in Modes 1-4 and is **Relocated** to the Licensing Requirements Manual (LRM). *SLCRS requirements for fuel movement* involving recently irradiated fuel are retained in ITS 3.7.12, "SLCRS" consistent with CTS 3.9.12.	

CTS SECTION 3/4.8 ELECTRICAL POWER SYSTEMS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.8.1.1 AC Sources Operating	3.8.1 AC Sources Operating 3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air 5.5.9 Diesel Fuel Oil Testing Program		
3/4.8.1.2 AC Sources Shutdown	3.8.2 AC Sources Shutdown		
3/4.8.2.1 AC Distribution Operating	3.8.7 Inverters Operating 3.8.9 Distribution Systems Operating		
3/4.8.2.2 AC Distribution Shutdown	3.8.8 Inverters Shutdown 3.8.10 Distribution Systems Shutdown		
3/4.8.2.3 DC Distribution Operating	3.8.4 DC Sources Operating 3.8.6 Battery Cell Parameters 3.8.9 Distribution Systems Operating		

CTS SECTION 3/4.8 ELECTRICAL POWER SYSTEMS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.8.2.4 DC Distribution Shutdown	3.8.5 DC Sources Shutdown 3.8.10 Distribution Systems Shutdown		

CTS SECTION 3/4.9 REFUELING OPERATIONS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.9.1 Boron Concentration	3.9.1 Boron Concentration		
3/4.9.2 Instrumentation	3.9.2 Nuclear Instrumentation		
3/4.9.3 Decay Time	N/A	Moved from the CTS to the LRM by an LA DOC.	
3/4.9.4 Containment Building Penetrations	3.9.3 Containment Penetrations		
3/4.9.8.1 RHR and Coolant Circulation	3.9.4 RHR and Coolant Circulation – High Water Level		
3/4.9.8.2 RHR and Coolant Circulation Low Water Level	3.9.5 RHR and Coolant Circulation – Low Water Level		
3/4.9.9 Containment Purge and Exhaust Isolation System	3.3.6 **Unit 2** Purge and Exhaust Isolation Instrumentation, 3.9.3 Containment Penetrations (for Unit 2 valve actuation surveillances)	**Unit 2** valve actuation surveillance requirements retained in ITS 3.9.3, "Containment Penetrations." Remainder of CTS 3/4.9.9 moved to Instrumentation Section 3.3B in the BVPS conversion documentation. All **Unit 1** CTS 3/4.9.9 requirements **Relocated** to the LRM. All changes to CTS 3/4.9.9 except for the Unit 2 Valve actuation requirements moving to ITS 3.9.3 are shown in Section 3.3B.	

CTS SECTION 3/4.9 REFUELING OPERATIONS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.9.10 Water Level Reactor Vessel	3.9.6 Refueling Cavity Water Level		
3/4.9.11 Storage Pool Water Level	3.7.15 Fuel Storage Pool Water Level	Moved to Section 3.7 of the conversion documentation. All changes to CTS shown in Section 3.7.	
3/4.9.12 Fuel Building Ventilation Fuel Movement	3.7.12 Supplemental Leak Collection and Release System (SLCRS)	Moved to Section 3.7 of the conversion documentation. All changes to CTS shown in Section 3.7.	
3/4.9.14 Spent Fuel Storage Pool **(Unit 1)** 3/4.9.14 Spent Fuel Pool Storage **(Unit 2)**	3.7.14 Spent Fuel Pool Storage	Moved to Section 3.7 of the conversion documentation. All changes to CTS shown in Section 3.7. Requirements of **Unit 1** CTS 3/4.9.14 are divided between ITS 3.7.14 and ITS 3.7.16.	
3/4.9.14 Spent Fuel Storage Pool **(Unit 1)** 3/4.9.15 Fuel Storage Pool Boron Concentration **(Unit 2)**	3.7.16 Fuel Storage Pool Boron Concentration	Moved to Section 3.7 of the conversion documentation. All changes to CTS shown in Section 3.7. Requirements of **Unit 1** CTS 3/4.9.14 are divided between ITS 3.7.14 and ITS 3.7.16.	

CTS SECTION 3/4.10 SPECIAL TEST EXCEPTIONS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.10.1 Shutdown Margin	N/A	Not in ISTS. Deleted From CTS. Addressed in Section 3.1 of BVPS conversion documentation.	

CTS SECTION 3/4.10 SPECIAL TEST EXCEPTIONS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.10.2 Group Height, Insertion and Power Distribution Limits	N/A	Not in ISTS. Deleted From CTS. Addressed in Section 3.1 of BVPS conversion documentation.	
3/4.10.3 Pressure/Temperature Limitation Reactor Criticality **(Unit 1)**	N/A	Not in ISTS. Deleted From CTS. Addressed in Section 3.1 of BVPS conversion documentation.	
3/4.10.3 Physics Tests **(Unit 2)** 3/4.10.4 Physics Tests **(Unit 1)**	3.1.9 PHYSICS TESTS Exceptions – Mode 2	Addressed in Section 3.1 of BVPS conversion documentation.	
3/4.10.4 Reactor Coolant Loops **(Unit 2)** 3/4.10.5 No Flow Tests **(Unit 1)**	3.4.19 RCS Loops - Test Exceptions	Addressed in Section 3.4 of BVPS conversion documentation.	

CTS SECTION 5.0 DESIGN FEATURES

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
5.1 Site Location	4.1 Site Location		
5.2 Reactor Core	4.2 Reactor Core		
5.3 Fuel Storage	4.3 Fuel Storage		

ITS SECTION 6.0 ADMINISTRATIVE CONTROLS

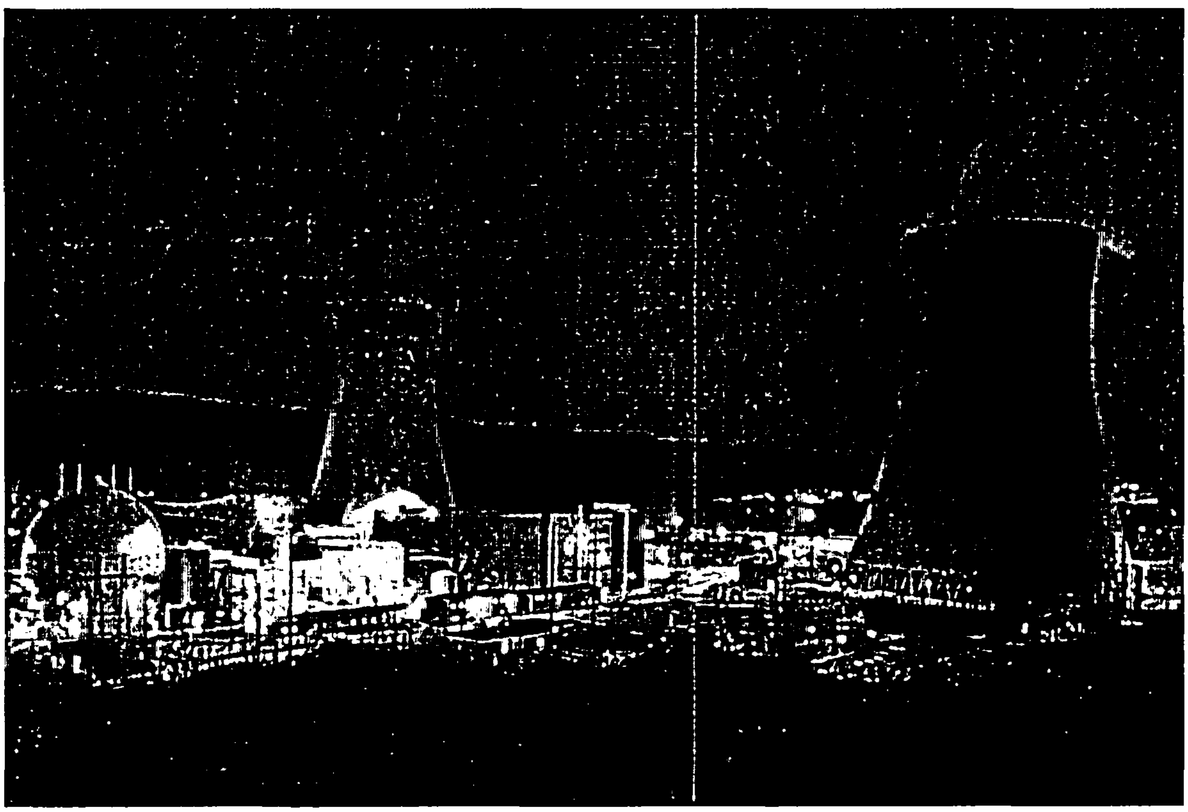
CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
6.1 Responsibility	5.1 Responsibility		
6.2.1 *Onsite and Offsite* Organizations	5.2.1 *Onsite and Offsite* Organizations		
6.2.2 Unit Staff	5.2.2 Unit Staff		
6.3 Facility Staff Qualifications	5.3.1 Facility Staff Qualifications		
6.4 & 6.5 Deleted	N/A		
6.6 Reportable Event Action	N/A	Deleted	
6.7 Deleted	N/A		
6.8 Procedures	5.4 Procedures 5.5 Programs and Manuals	Many subsections of CTS 6.8 are moved into new ITS Section 5.5 for Programs. CTS requirements moved into ITS Section 5.5 from Sections 3.4 and 3.7 for new programs are affected by LARs.	**Draft pages** utilized from LAR #s 302 (Unit 1) and 173 (Unit 2). **Draft pages** utilized from LAR #s 325 (Unit 1) and 195 (Unit 2).
6.9.1 Deleted	N/A		
6.9.2 Annual Radiological Environmental Operating Report	5.6.1 Annual Radiological Environmental Operating Report		
6.9.3 Annual Radioactive Effluent Release Report	5.6.2 Radioactive Effluent Release Report		
6.9.4 Deleted	N/A		
6.9.5 Core Operating Limits Report (COLR)	5.6.3 Core Operating Limits Report (COLR)		**Draft pages** utilized from LAR #s 310 (Unit 1) and 182 (Unit 2) **Draft pages** utilized from LAR #s 318 (Unit 1) and 191 (Unit 2) **Draft pages** utilized from LAR #s 302 (Unit 1) and 173 (Unit 2)

ITS SECTION 6.0 ADMINISTRATIVE CONTROLS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
6.9.6 Pressure Temperature Limits Report (PTLR)	5.6.4 Reactor Coolant System (RCS) Pressure Temperature Limits Report (PTLR)		
6.10 Deleted	N/A		
6.11 Radiation Protection Program	N/A	CTS requirements moved to UFSAR.	
6.12 High Radiation Area	5.7 High Radiation Area		
6.13 Process Control Program (PCP)	N/A	CTS requirements moved to UFSAR.	
6.14 Offsite Dose Calculation Manual (ODCM)	5.5.1 Offsite Dose Calculation Manual (ODCM)		
6.15 & 6.16	N/A	CTS # 6.15 is not used and CTS 6.16 only refers to being moved to the PCP (CTS 6.13)	
6.17 Containment Leakage Rate Testing Program	5.5.12 Containment Leakage Rate Testing Program		Draft pages utilized from LAR #s 317 (Unit 1) and 190 (Unit 2)
6.18 Technical Specifications (TS) Bases Control Program	5.5.10 Technical Specifications (TS) Bases Control Program		

BEAVER VALLEY POWER STATION
UNITS 1 & 2

IMPROVED TECHNICAL SPECIFICATION CONVERSION LICENSE AMENDMENT REQUEST



VOLUME 5

SECTION 3.3B - REMAINDER OF INSTRUMENTATION T.S.

REVISION 1

Replace The Entire Original Volume 5 With This Updated Revision 1 Volume.

BVPS CONVERSION TO IMPROVED STANDARD
TECHNICAL SPECIFICATIONS (ISTS)

SECTION 3.3 B Instrumentation

ENCLOSURES

1. MARKUP OF THE ISTS TO SHOW THE BVPS DIFFERENCE AND JUSTIFICATION FOR THE DEVIATION (JFD) FROM THE STANDARD
2. MARKUP OF THE ISTS BASES TO SHOW THE BVPS DIFFERENCE AND JFD FROM THE STANDARD
3. MARKUP OF THE CURRENT BVPS TECHNICAL SPECIFICATIONS (CTS) TO SHOW CHANGES AND DISCUSSION OF CHANGES (DOCs)
4. NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC) FOR CHANGES MADE TO THE CTS

ENCLOSURE 1

CHANGES TO THE ISTS

MARKUPS TO SHOW BVPS PLANT SPECIFIC DIFFERENCES
&
JUSTIFICATION FOR DEVIATION (JFD)
FROM THE STANDARD TS

Introduction

This enclosure contains the markup of the Improved Standard Technical Specifications (ISTS) to show the changes necessary to make the ISTS document specific to BVPS Units 1 and 2. Changes to the ISTS are identified with a number. The number is associated with a JFD that describes the reason for the change. The markup of the ISTS is followed by a document containing the numbered JFDs for the changes made to each of the ISTS. Not every change to the ISTS is identified and explained by a JFD. Changes that simply insert current Technical Specification (CTS) information into bracketed (optional) ISTS text are not identified with a separate JFD. Bracketed ISTS text identifies specific text that is to be replaced with the corresponding CTS information. Therefore, such changes to the ISTS are self-explanatory and represent the simple transference of CTS requirements to the ISTS. Other changes to the ISTS (i.e., less obvious changes) are described by a JFD.

As the BVPS Unit 1 & 2 Technical Specifications (TS) are being combined into a single set of TS, one markup of each ISTS is usually provided for both Units 1 and 2. In cases where significant Unit differences make separate Unit 1 and 2 TS desirable to preserve the presentation and clarity of the TS requirements, separate Unit specific TS are included. Unit differences are identified in each ISTS.

In addition, the ISTS in this enclosure are marked (where applicable) to show the changes to the standard text resulting from the Industry/NRC TS Task Force (TSTF) process. The TSTF revisions to the standard are marked-up and identified with the applicable TSTF number (i.e., TSTF-03, TSTF-19, etc.). Each TSTF change has its own justification associated with it as part of the Industry/NRC process. The TSTF justifications are not repeated in the BVPS ISTS conversion documentation.

The following Table contains the list of the ISTS and the corresponding BVPS CTS for this section along with the resulting BVPS specific ITS for the section. The Table provides a summary disposition of the ISTS and the CTS for this Section.

SECTION 3.3 B Instrumentation

ISTS	BVPS ITS	CTS
3.3.3 Post Accident Monitoring (PAM) Instrumentation	3.3.3 PAM Instrumentation	3.3.3.8 Post Accident Monitoring (PAM) Instrumentation 3.3.3.1 Radiation Monitoring Instrumentation
3.3.4 Remote Shutdown Instrumentation	3.3.4 Remote Shutdown Instrumentation	3.3.3.5 Remote Shutdown Instrumentation
3.3.5 *Loss of Power* (LOP) Diesel Generator (DG) Start Instrumentation	3.3.5 *Loss of Power LOP DG* Start and Bus Separation Instrumentation	3.3.2.1 *Engineered Safety* Feature System Instrumentation Function 6 Loss of Power
3.3.6 Containment Purge and Exhaust Isolation Instrumentation	3.3.6 **Unit 2** Containment Purge and Exhaust Isolation Instrumentation	3.9.9 Containment Purge and Exhaust Isolation 3.3.3.1 Radiation Monitoring Instrumentation Process Monitor 2.c.ii
3.3.7 Control Room Emergency Filtration System (CREFS) Instrumentation	3.3.7 Control Room Emergency Ventilation System (CREVS) Instrumentation	3.3.3.1 Radiation Monitoring Instrumentation Area Monitor 1.c
3.3.8 Fuel Building Air Cleanup System (FBACS) Actuation Instrumentation	Not used. (1)	N/A
3.3.9 Boron Dilution Protection System (BDPS) Instrumentation	3.3.8 Boron Dilution Detection Instrumentation (2)	3.3.1.1 Reactor Trip System Instrumentation Function 6.b (Source Range Instrumentation Indication Requirements)

NOTES:

1. ISTS 3.3.8, FBACS, is not used in the BVPS specific implementation of the ISTS. BVPS does not have CTS requirements, or a system design that corresponds to FBACS, or safety analyses assumptions that would require this type of instrumentation to be operable.

2. ISTS 3.3.9 (ITS 3.3.8) is revised to conform to the BVPS design. The generic ISTS 3.3.9 applies to a plant design that has an active system using source range instrument channels to initiate automatic action that re-positions valves in order to mitigate a boron dilution event. The BVPS design does not include this type of automatic mitigation

system. The proposed BVPS version of this ISTS contains the source range indication requirements moved from the Reactor Trip System Instrumentation TS. The affected BVPS source range indication requirements provide monitoring capability only. Therefore, consistent with the ISTS the source range indication only requirements were removed from the Reactor Trip System Technical Specification. The proposed ITS 3.3.8 was developed for the BVPS specific source range indication requirements.

Rev. 1 to 2/28/05 submittal

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

-----NOTE-----
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.~~7~~ 5	Immediately 1
C. One or more Functions with two or more required channels inoperable.	C.1 Restore all but one channel to OPERABLE status.	7 days 2
D. Required Action and associated Completion Time of Condition C not met.	D.1 Enter the Condition referenced in Table 3.3.3.1 for the ~~channel~~ Function.	Immediately

3

Rev. 1 to 2/28/05 submittal

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. As required by Required Action D.1 and Referenced in Table 3.3.3-1.	E.1 Be in MODE 3. AND E.2 Be in MODE 4.	6 hours 12 hours
F. As required by Required Action D.1 and referenced in Table 3.3.3-1.	F.1 Initiate action in accordance with Specification 5.6.7.	Immediately

5

1

, except as noted in SR 3.3.3.2.

SURVEILLANCE REQUIREMENTS

-----NOTE-----
SR 3.3.3.1 and SR 3.3.3.2 apply to each PAM instrumentation Function in Table 3.3.3-1.

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	-----NOTE----- Neutron detectors are excluded from CHANNEL CALIBRATION. ----- Perform CHANNEL CALIBRATION.	[18] months

4

S

1.

2. Not applicable to the Penetration Flow Path Containment Isolation Valve Position Function.

4

SR 3.3.3.3	-----NOTE----- Only applicable to the Penetration Flow Path Containment Isolation Valve Position Function. ----- Perform TADOT.	18 months

6

Rev. 1 to 2/28/05 submittal

INSERT BVPS PAM TABLE

5

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

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

(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).

5

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.

Rev. 1 to 2/28/05 submittal

BVPS PAM TABLE (combined Unit 1 and 2)

5

	FUNCTION	REQUIRED CHANNELS	CONDITION REFERENCED FROM REQUIRED ACTION D.1
1.	Power Range Neutron Flux	2	E
2.	Intermediate Range Neutron Flux	2	E
3.	Source Range Neutron Flux	2	E
4.	Reactor Coolant System (RCS) Hot Leg Temperature (Wide Range)	2	E
5.	RCS Cold Leg Temperature (Wide Range)	2	E
6.	RCS Pressure (Wide Range)	2	E
7.	Reactor Vessel Water Level	2	F
8.	Containment Sump Water Level (Wide Range)	2	E
9.	Containment Pressure (Wide Range)	2	E
10.	Containment Area Radiation (High Range)	2	F
11.	Pressurizer Water Level	2	E
12.	Steam Generator (SG) Water Level (Wide Range)	3	E
13.	SG Pressure		
	a) SG "A"	2	E
	b) SG "B"	2	E
	c) SG "C"	2	E
14.	Condensate Storage Tank Level	2	E
15.	Refueling Water Storage Tank Level (Wide Range)	2	E
16.	Penetration Flow Path Containment Isolation Valve Position	2 per penetration flow path(a)(b)	E
17.	Core Exit Temperature		
	a) Quadrant 1	2(c)	E
	b) Quadrant 2	2(c)	E
	c) Quadrant 3	2(c)	E
	d) Quadrant 4	2(c)	E
18.	Secondary Heat Sink Indication		
	a) SG "A"	2(d)	E
	b) SG "B"	2(d)	E
	c) SG "C"	2(d)	E
19.	High Head SI Automatic Injection Header Flow	1	N/A

6

(d) The required channels may be satisfied by using any combination of SG Water Level (Narrow Range) channels and Auxiliary Feedwater Flow channels such that 2 channels are OPERABLE for each SG.

3.3 INSTRUMENTATION

3.3.4 Remote Shutdown System

LCO 3.3.4 The Remote Shutdown System Functions shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

TSTF-359

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 required Functions inoperable.	A.1	Restore required Function to OPERABLE status.	30 days
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours
	<u>AND</u>		
	B.2	Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

3

SURVEILLANCE		FREQUENCY
SR 3.3.4.1	~~[~~Perform CHANNEL CHECK for each required indication instrumentation channel that is normally energized.	31 days~~]~~
SR 3.3.4.2 3	Verify each required control circuit and transfer switch is capable of performing the intended function.	~~[18]~~ 36 months

1

9

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.4.3 1 2 3 indication	- NOTE - Neutron detectors are excluded from CHANNEL CALIBRATION. Perform CHANNEL CALIBRATION for each required instrumentation channel.	[18] months
~~SR 3.3.4.4~~	~~[Perform TADOT of the reactor trip breaker open/closed indication.~~	~~18 months]~~

2

and Bus Separation

3.3 INSTRUMENTATION

3.3.5 Loss of Power (LOP) Diesel Generator (DG) Start Instrumentation

LCO 3.3.5 ~~[Three] channels per bus of the loss of voltage Function and [three] channels per bus of the degraded voltage Function~~ shall be OPERABLE.

The DG Start and Bus Separation instrumentation specified in Table 3.3.5-1

1

APPLICABILITY: MODES 1, 2, 3, and 4,
When associated DG is required to be OPERABLE by LCO 3.8.2, "AC Sources - Shutdown."

INSERT NEW CONDITION A

3

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.	[6] hours
B. One or more Functions with two ~~or more~~ channels per bus inoperable.	B.1	Restore ~~all but~~ one channel per bus to OPERABLE status.	1 hour
C. Required Action and associated Completion Time not met.	C.1	Enter applicable Condition(s) and Required Action(s) for the associated DG made inoperable by LOP DG start instrumentation.	Immediately

5

provided the corresponding instrument channels, electrical bus, and DG in the other train are OPERABLE.

B

B

C

C

4

6

E

1

or Bus Separation

INSERT NEW CONDITION D

11

and Bus Separation

CTS Value

7

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
~~SR 3.3.5.1~~	~~[Perform CHANNEL CHECK.~~	~~12 hours]~~ 92
SR 3.3.5.~~2~~ 1	Perform TADOT. Insert SR Note	~~[31]~~ days
SR 3.3.5.~~3~~ 2	Perform CHANNEL CALIBRATION ~~with [Nominal Trip Setpoint and Allowable Value] as follows:~~ ~~a. [Loss of voltage Allowable Value ≥ [2912] V and ≤ [ ] V with a time delay of [0.8] ± [ ] second.~~ ~~Loss of voltage Nominal Trip Setpoint [2975] V with a time delay of [0.8] ± [ ] second.]~~ ~~b. [Degraded voltage Allowable Value ≥ [3683] V and ≤ [ ] V with a time delay of [20] ± [ ] seconds.~~ ~~Degraded voltage Nominal Trip Setpoint [3746] V with a time delay of [20] ± [ ] seconds.]~~	[18] months
SR 3.3.5.3	Verify ESF RESPONSE TIMES are within limit.	18 months on a STAGGERED TEST BASIS

1

2

8

9

10

1

INSERT TABLE 3.3.5-1

INSERTS FOR ITS 3.3.5

New Condition A

A. One or more Functions with one or more required channels inoperable.	A.1 Enter the applicable Condition(s) referenced in Table 3.3.5-1 for the affected channel(s).	Immediately

New Condition D

D. One or more Functions with one channel per bus inoperable.	D.1 Restore inoperable channel to OPERABLE status.	1 hour

Table 3.3.5-1 (page 1 of 1)
Loss of Power Diesel Generator Start and Bus Separation Instrumentation

FUNCTION	REQUIRED CHANNELS PER BUS	CONDITIONS	UNIT 1 ALLOWABLE VALUE	UNIT 2 ALLOWABLE VALUE
Loss of Voltage				
1. 4160V Emergency Bus DG start	1	D, E	≥ 2962 V with a time delay of < 0.9 seconds	≥ 2962 V with a time delay of 0.33 ± 0.03 seconds
2. 4160V Emergency Bus Bus Separation	1 (Unit 1) 2 (Unit 2)	D, E (Unit 1) B,C,E (Unit 2)	≥ 2962 V with a time delay of 1.0 ± 0.1 seconds	≥ 2962 V with a time delay of 1.0 ± 0.1 seconds
Degraded Voltage				
3. 4160V Emergency Bus Bus Separation	2	B,C,E	≥ 3885.4 V with a time delay of 90 ± 5.0 seconds	≥ 3873 V with a time delay of 90 ± 5.0 seconds
4. 480V Emergency Bus Bus Separation	2	B,C,E	≥ 448.3 V with a time delay of 90 ± 5.0 seconds	≥ 446.9 V with a time delay of 90 ± 5.0 seconds

SR 3.3.5.1 Note Insert

- NOTE -
Verification of setpoint is not required.

Unit 2

—NOTE—
This Specification is only applicable to Unit 2

3.3 INSTRUMENTATION

3.3.6 Containment Purge and Exhaust Isolation Instrumentation

Unit 2

1

2

LCO 3.3.6 The Containment Purge and Exhaust Isolation instrumentation for each Function in Table 3.3.6-1 shall be OPERABLE.

During movement of recently irradiated fuel assemblies within the containment, and
During movement of fuel assemblies over recently irradiated fuel assemblies within the containment.

APPLICABILITY: ~~According to Table 3.3.6-1~~.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One radiation monitoring channel inoperable.	A.1 Restore the affected channel to OPERABLE status.	4 hours
~~B. - NOTE - Only applicable in MODE 1, 2, 3, or 4. One or more Functions with one or more manual or automatic actuation trains inoperable. OR Two or more radiation monitoring channels inoperable. OR Required Action and associated Completion Time of Condition A not met.~~	~~B.1 Enter applicable Conditions and Required Actions of LCO 3.6.3, "Containment Isolation Valves," for containment purge and exhaust isolation valves made inoperable by isolation instrumentation.~~	~~Immediately~~

3

3

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B ~~C~~. ~~- NOTE - Only applicable during movement of [recently] irradiated fuel assemblies within containment.~~ 4 5 One or more ~~Functions with one or more~~ manual ~~or automatic actuation trains~~ initiation channels inoperable. OR Two ~~or more~~ radiation monitoring channels inoperable. 7 OR Required Action and associated Completion Time for Condition A not met.	B ~~C~~.1 Place and maintain containment purge and exhaust valves in closed position. 3 OR B ~~C~~.2 Enter applicable Conditions and Required Actions of LCO ~~3.9.4~~ 3.9.3, "Containment Penetrations," for containment purge and exhaust isolation valves made inoperable by isolation instrumentation. 6	Immediately Immediately

SURVEILLANCE REQUIREMENTS

- NOTE -
Refer to Table 3.3.6-1 to determine which SRs apply for each Containment Purge and Exhaust Isolation Function.

SURVEILLANCE		FREQUENCY
SR 3.3.6.1	Perform CHANNEL CHECK.	12 hours
8 ~~SR 3.3.6.2~~	~~Perform ACTUATION LOGIC TEST.~~	~~31 days on a STAGGERED TEST BASIS~~

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
8 ~~SR 3.3.6.3~~	~~Perform MASTER RELAY TEST.~~	~~31 days on a STAGGERED TEST BASIS~~
SR 3.3.6.2 ~~SR 3.3.6.4~~	Perform COT.	92 days
8 ~~SR 3.3.6.5~~	~~Perform SLAVE RELAY TEST.~~	~~[92] days~~
~~SR 3.3.6.6~~ SR 3.3.6.3	- NOTE - Verification of setpoint is not required. Perform TADOT.	[18] months
SR 3.3.6.4 ~~SR 3.3.6.7~~ 8	Perform CHANNEL CALIBRATION.	[18] months

Unit 2

Table 3.3.6-1 (page 1 of 1)
Containment Purge and Exhaust Isolation Instrumentation

2

10

1 per valve

8

3.3.6.3

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	TRIP SETPOINT
1. Manual Initiation	1,2,3,4, (a)	2	SR ~~3.3.6.6~~	NA
2. Automatic Actuation Logic and Actuation Relays	1,2,3,4, (a)	2 trains	~~SR 3.3.6.2~~ SR 3.3.6.3 SR 3.3.6.5	NA
3. ~~[~~Containment Radiation		CTS Value		
~~a.~~ Gaseous	1,2,3,4, (a)	[1]	SR 3.3.6.1 SR ~~3.3.6.4~~ SR ~~3.3.6.7~~	≤ ~~[2 x background]~~
b. Particulate	1,2,3,4, (a)	[1]	SR 3.3.6.1 SR 3.3.6.4 SR 3.3.6.7	≤ [2 x background]
c. Iodine	1,2,3,4, (a)	[1]	SR 3.3.6.1 SR 3.3.6.4 SR 3.3.6.7	≤ [2 x background]
d. Area Radiation	1,2,3,4, (a)	[1]	SR 3.3.6.1 SR 3.3.6.4 SR 3.3.6.7	≤ [2 x background]]
4. Containment Isolation - Phase A	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 3.a., for all initiation functions and requirements.			

8

2

2

8

3.3.6.2

3.3.6.4

1.01×10^{-3} μ Ci / cc above background

CTS Value

9

(a) During movement of [recently] irradiated fuel assemblies within containment.

2

17

Ventilation

3.3 INSTRUMENTATION

3.3.7 Control Room Emergency ~~Filtration~~ System (CRE~~F~~S) Actuation Instrumentation

V

LCO 3.3.7 The CRE~~F~~S actuation instrumentation for each Function in Table 3.3.7-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.7-1.

ACTIONS

- NOTE -

Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more Functions with one channel or train inoperable.	A.1	~~- NOTE - [Place in toxic gas protection mode if automatic transfer to toxic gas protection mode is inoperable.]~~	
		Place one CRE~~F~~S train in emergency ~~[radiation protection]~~ mode~~.~~ pressurization V of operation.	7 days
B. One or more Functions with two channels or two trains inoperable.		~~- NOTE - [Place in the toxic gas protection mode if automatic transfer to toxic gas protection mode is inoperable.]~~	
	B.1~~.1~~	Place one CRE~~F~~S train in emergency ~~[radiation protection]~~ mode pressurization V of operation.	Immediately
	AND		

1

10
of LCO 3.7.10, "CREVS,"

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	B.~~1.~~2	Enter applicable Conditions and Required Actions for ~~one~~ CRE~~F~~S train made inoperable by inoperable CRE~~F~~S actuation instrumentation.	Immediately
	~~OR~~		
	~~B.2~~	~~Place both trains in emergency [radiation protection] mode.~~	~~Immediately~~
C. Required Action and associated Completion Time for Condition A or B not met in MODE 1, 2, 3, or 4.	C.1	Be in MODE 3.	6 hours
	AND		
	C.2	Be in MODE 5.	36 hours
D. Required Action and associated Completion Time for Condition A or B not met during movement of [recently] irradiated fuel assemblies.	D.1	Suspend movement of [recently] irradiated fuel assemblies.	Immediately
~~E. [Required Action and associated Completion Time for Condition A or B not met in MODE 5 or 6.~~	~~E.1~~	~~Initiate action to restore one CREFS train to OPERABLE status.~~	~~Immediately]~~

2

V

, or during movement of fuel assemblies over recently irradiated fuel assemblies.

CTS Applicability

3

AND			
D.2	Suspend movement of fuel assemblies over recently irradiated fuel assemblies.		Immediately

SURVEILLANCE REQUIREMENTS

- **NOTE** -
Refer to Table 3.3.7-1 to determine which SRs apply for each CREFS V Actuation Function.

SURVEILLANCE		FREQUENCY
SR 3.3.7.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.7.2	Perform COT.	92 days
SR 3.3.7.3	Perform ACTUATION LOGIC TEST.	31 days on a STAGGERED TEST BASIS
SR 3.3.7.4	Perform MASTER RELAY TEST.	31 days on a STAGGERED TEST BASIS
SR 3.3.7.5	Perform SLAVE RELAY TEST.	[92] days
SR 3.3.7.6 3	- **NOTE** - Verification of setpoint is not required.	
4	Perform TADOT.	[18] months
SR 3.3.7.7	Perform CHANNEL CALIBRATION.	[18] months

4

4

Table 3.3.7-1 (page 1 of 1)
CRE~~F~~VS Actuation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	TRIP SETPOINT
1. Manual Initiation	1, 2, 3, 4, ~~[5, 6]~~ (a)	2 trains	SR ~~3.3.7.6~~ 3.3.7.3	NA
~~2. Automatic Actuation Logic and Actuation Relays~~	~~1, 2, 3, 4, [5, 6], (a)~~	~~2 trains~~	~~SR 3.3.7.3 SR 3.3.7.4 SR 3.3.7.5~~	~~NA~~
~~3.~~ 2 Control Room Radiation				
~~a.~~ Control Room ~~Atmosphere~~ Area Monitors	~~1, 2, 3, 4, [5, 6]~~ (a)	[2]	SR 3.3.7.1 SR 3.3.7.2 SR ~~3.3.7.7~~ 3.3.7.4	~~≤ [2] mR/hr~~ Unit 1 ≤ 0.47 mR/hr above background; Unit 2 ≤ 0.476 mR/hr above background
~~b. Control Room Air Intakes~~	~~1, 2, 3, 4, [5, 6], (a)~~	~~[2]~~	~~SR 3.3.7.1 SR 3.3.7.2 SR 3.3.7.7~~	~~≤ [2] mR/hr~~
~~4.~~ 3 ~~Safety Injection~~ Containment Isolation - Phase B	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function ~~1~~ 3.b for all initiation functions and requirements.			

(a) During movement of [recently] irradiated fuel assemblies~~.~~, and during movement of fuel assemblies over recently irradiated fuel assemblies.

CTS Values

3.3 INSTRUMENTATION

3.3.8 Fuel Building Air Cleanup System (FBACS) Actuation Instrumentation

LCO 3.3.8 The FBACS actuation instrumentation for each Function in Table 3.3.8-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.8-1.

ACTIONS

- NOTES -

1. LCO 3.0.3 is not applicable.
2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more Functions with one channel or train inoperable.	A.1	Place one FBACS train in operation.	7 days
B. One or more Functions with two channels or two trains inoperable.	B.1.1	Place one FBACS train in operation.	Immediately
		AND	
	B.1.2	Enter applicable Conditions and Required Actions of LCO 3.7.13, "Fuel Building Air Cleanup System (FBACS)," for one train made inoperable by inoperable actuation instrumentation.	Immediately
	OR		
	B.2	Place both trains in emergency [radiation protection] mode.	Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. Required Action and associated Completion Time for Condition A or B not met during movement of [recently] irradiated fuel assemblies in the fuel building.	C.1	Suspend movement of [recently] irradiated fuel assemblies in the fuel building.	Immediately
D. [Required Action and associated Completion Time for Condition A or B not met in MODE 1, 2, 3, or 4.	D.1	Be in MODE 3.	6 hours
	AND		
	D.2	Be in MODE 5.	36 hours]

SURVEILLANCE REQUIREMENTS

- NOTE -

Refer to Table 3.3.8-1 to determine which SRs apply for each FBACS Actuation Function

---

	SURVEILLANCE	FREQUENCY
SR 3.3.8.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.8.2	Perform COT.	92 days
SR 3.3.8.3	[Perform ACTUATION LOGIC TEST.	31 days on a STAGGERED TEST BASIS]
SR 3.3.8.4	**- NOTE -** *Verification of setpoint is not required.* Perform TADOT.	[18] months

1

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.8.5	Perform CHANNEL CALIBRATION.	[18] months

1

Table 3.3.8-1 (page 1 of 1)
FBACS Actuation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	TRIP SETPOINT
1. Manual Initiation	[1,2,3,4], (a)	2	SR 3.3.8.4	NA
2. [Automatic Actuation Logic and Actuation Relays	1,2,3,4, (a)	2 trains	SR 3.3.8.3	NA]
3. Fuel Building Radiation				
a. Gaseous	[1,2,3,4], (a)	[2]	SR 3.3.8.1 SR 3.3.8.2 SR 3.3.8.5	≤ [2] mR/hr
b. Particulate	[1,2,3,4], (a)	[2]	SR 3.3.8.1 SR 3.3.8.2 SR 3.3.8.5	≤ [2] mR/hr

(a) During movement of [recently] irradiated fuel assemblies in the fuel building.

Boron Dilution Detection Instrumentation 3.3.8

~~BDPS 3.3.9~~

1

3.3 INSTRUMENTATION

~~3.3.9 Boron Dilution Protection System (BDPS)~~

3.3.8 Boron Dilution Detection Instrumentation

2

3.3.8

LCO ~~3.3.9~~ ~~Two trains of the BDPS~~ One Source Range channel shall be OPERABLE.

APPLICABILITY: MODES ~~[2,]~~ 3, 4, and 5 with all rods fully inserted and without rod withdrawal capability

4

~~-NOTE -~~
~~The boron dilution flux doubling signal may be blocked in MODES 2 and 3 during reactor startup.~~

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ~~One train~~ Required channel inoperable.	~~A.1 Restore train to OPERABLE status.~~	~~72 hours~~
~~B. Two trains inoperable.~~ ~~OR~~ ~~Required Action and associated Completion Time of Condition A not met.~~	- NOTE - Plant temperature changes are allowed provided the temperature change is accounted for in the calculated SDM.	
	A.1 Suspend operations involving positive reactivity additions.	Immediately
	AND	
	A.2.1 Restore ~~one train~~ inoperable channel to OPERABLE status.	1 hour
	OR	

4

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
4 A	B.2.2.1 Close unborated water source isolation valves. AND B.2.2.2 Perform SR 3.1.1.1.	1 hour 1 hour AND Once per 12 hours thereafter

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
2 3.3.8 SR ~~3.3.9~~.1	Perform CHANNEL CHECK.	12 hours
~~SR 3.3.9.2~~	~~Perform COT.~~	~~[92] days~~
3 3.3.8.2 SR ~~3.3.9.3~~	- NOTE - Neutron detectors are excluded from CHANNEL CALIBRATION. Perform CHANNEL CALIBRATION.	[18] months

3.3 B Instrumentation

JUSTIFICATIONS FOR DEVIATION

ITS 3.3.3 Post Accident Monitoring (PAM) Instrumentation

JUSTIFICATION FOR DEVIATION (JFD)

1. ISTS 3.3.3 Required Actions B.1 and F.1 refer to Specification 5.6.7 in the administrative controls section of the TS. Specification 5.6.7 contains the PAM Reporting requirements. In the BVPS specific Section 5.0, the corresponding PAM Report is numbered 5.6.5. Therefore, the corresponding BVPS PAM Required Actions refer to Specification 5.6.5 instead of 5.6.7. This change is consistent with TSTF-369, Rev.1 (deletion of Monthly Operating Report) which is approved but not yet incorporated into the ISTS revision 3.

2. ISTS 3.3.3 Action Condition C is applicable for two inoperable PAM channels and is intended to address the condition where one or more required instrument Functions have no channels remaining operable. The corresponding ITS 3.3.3 Condition C and Required Action C.1 are revised to address the condition of two or more channels inoperable. The BVPS specific implementation of the PAM TS contains a Function with 3 required channels (SG level wide range). The intent of the ISTS Action C.1 is that by restoring one of the two inoperable channels to operable status, Condition A would become applicable for the remaining inoperable channel. The proposed change provides an Action Condition that addresses all the two channel Functions in the same manner as intended by the original Action C.1 and that also addresses the potential of more than two inoperable channels that could result from the single BVPS Function with 3 required channels.

3. ISTS Action D.1 states "Enter the Condition referenced in Table 3.3.3-1 for the channel." The proposed BVPS ITS Action D.1 states "Enter the Condition referenced in Table 3.3.3-1 for the Function." The proposed BVPS Action revises the Action reference from "channel" to "Function." As PAM Table 3.3.3-1 lists the instrumentation by "Function" and the Action Conditions A and C also refer to "One or more Functions..." from the Table, the proposed change provides a more consistent reference to the instrumentation listed on Table 3.3.3-1.

4. The ISTS 3.3.3 Surveillances include a Channel Check and a Channel Calibration applicable to each PAM Function listed in Table 3.3.3-1. The ISTS surveillances are revised by the addition of a third surveillance, a Trip Actuating Device Operational Test or TADOT. The proposed change includes modifying the general surveillance note and including an additional note in the channel calibration surveillance as well as adding the third surveillance. These changes serve to clarify that the newly introduced TADOT surveillance would only be performed on the containment isolation valve position indication Function instead of the Channel Calibration.

   The containment isolation valve position indication Function consists of valve position switches that actuate contacts to indicate valve position remotely. The ISTS includes

several defined instrument tests that are applied to the various instruments required Operable in the TS. The ISTS TADOT defined test, which includes guidance for operating and adjusting a "trip actuating device" (i.e., switch) is typically applied to instrument channels consisting of a more simple switch and contact arrangement such as the containment isolation valve position indication channels. The Channel Calibration defined test, which includes guidance for the calibration of instrument channels that include such things as resistance temperature detectors and thermocouples, is more typically applied to instrument channels that monitor a process variable and convert or process the monitored signal through various stages to actuate an output device at a specified setpoint or provide a variable output signal for indication. As such, the TADOT surveillance requirement, which more closely addresses the adjustment of switch contacts, is more appropriate for the containment isolation valve position indication channels than a Channel Calibration. Therefore, the proposed change more accurately matches the instrumentation being calibrated to the defined TS surveillance test requirement. In addition, the NRC has previously approved this change for the North Anna Plant in the license amendment associated with the North Anna ISTS conversion.

5. The ISTS Table 3.3.3-1 contains a typical list of PAM instrumentation. The reviewers note under the Table provides guidance for constructing a plant specific PAM instrumentation Table. The reviewers note requires that the list of instrumentation in the Table be comprised of instrumentation monitoring variables identified as Regulatory Guide Type A or Category 1.

   The proposed BVPS PAM instrumentation is based on the BVPS Unit 1 and Unit 2 Regulatory Guide 1.97 Reports. It should be noted that the proposed BVPS list of PAM instrumentation contains considerably more instrumentation than the current BVPS PAM TS. In addition, BVPS has proposed the addition of some instrumentation monitoring variables not identified as Type A or Category 1 in the BVPS Regulatory Guide 1.97 Report. However, BVPS has proposed some exceptions to the guidance provided in the reviewer's note that all Type A and Category 1 variables be addressed in the Table. The following describes the Type A or Category 1 variables not included in the BVPS specific Table and the variables that are not Type A or Category 1 that are included in the Table.

   Type A or Category 1 Variables Not Included:

   A. Unit 2 Containment Sump Level (Narrow Range) is not included in the proposed PAM TS. This Unit 2 variable was classified as a Type A and Category 1 variable by the Unit 2 Regulatory Guide 1.97 Report.

      The containment sump water level indication provides information to indicate whether sufficient water is available in the containment sump at the time that the recirculation spray system is automatically started. It also provides an indication of excessive containment water levels that could result in the flooding of key equipment and instrumentation. A portion of the recirculation spray system is switched-over to provide long term low head emergency core cooling when the

RWST level reaches the extreme low level setpoint. All actions associated with recirculation spray system however are automatic, and therefore no operator action is required in the design basis analyses based on the containment sump level. The narrow range sump level indication provides information regarding the normal containment sump level and is limited to 0-12 inches of range. The normal containment sump level is not the primary indication for determining the level of water in the containment ECCS sump where the recirculation spray pumps take suction. The wide range sump level indication is located in the ECCS sump and provides the necessary range (0-200") to determine such post accident conditions as the water level in the ECCS sump at the time the recirculation spray system is started. The narrow range sump level indication may be used for RCS leak detection and is addressed in the technical specification for RCS Leakage Detection Instrumentation (BVPS ITS 3.4.15). Therefore, for the purpose of post accident monitoring, the wide range containment sump level indication provides the necessary indication and range to determine the ECCS sump level during accident conditions. The narrow range indication would not provide a direct indication of conditions in the ECCS sump required during post accident conditions and is limited to 12 inches of range. Therefore, the narrow range containment sump level indication is not required in the PAM TS to assure the necessary post accident monitoring information is available in the control room.

The Unit 2 wide range sump level indication is included in the proposed PAM ITS. The PAM ITS requires 2 channels of wide range sump level indication operable which is sufficient to assure the capability to monitor sump level after an accident is maintained. The inclusion of the Unit 2 wide range sump level and not the narrow range level in the PAM ITS is consistent with the CTS requirements for both Unit 1 and 2. In addition, it should be noted that two channels of RWST level are also included in the proposed ITS PAM list. The RWST level also provides information directly related to the amount of water delivered to the RCS and subsequently to the containment during and after safety injection.

Two channels of containment sump wide range level and RWST level are included in the proposed PAM ITS. The information provided by these instruments is sufficient to monitor the water level in the ECCS containment sump, even considering a single failure. Therefore, the inclusion of the containment sump narrow range indication in the PAM specification is unnecessary. The proposed PAM instrumentation is adequate to assure the capability to determine the amount of water in containment.

B. <u>Unit 2 RCS Subcooling Margin Monitor</u> is not included in the proposed PAM TS. This Unit 2 variable was classified as a Type A and Category 2 variable in the Unit 2 Regulatory Guide 1.97 Report. Unit 1 classified the RCS subcooling monitor as monitoring a Regulatory Guide 1.97 Type B, Category 2 variable.

The RCS subcooling indication provides information to the control room

operators related to satisfying one of the SI termination criteria following a design basis accident. The inputs to the RCS subcooling monitor are the core exit thermocouples for RCS temperature and the wide range RCS pressure indication for RCS pressure. Since both of these indications are independently available in the control room and are also included in proposed BVPS PAM ITS, the RCS subcooling monitor only provides a verification of these other primary indications. The backup nature of the Unit 2 Subcooling Margin Monitor indication is identified in UFSAR (Table 7.5.4). In addition, the RCS hot leg temperature indication and RCS cold leg temperature indication are included in the BVPS PAM ITS. The RCS hot leg temperature indication can also be used to verify adequate core cooling, RCS subcooling, and in conjunction with the RCS cold leg temperature indication, the effectiveness of RCS heat removal by the secondary system. The RCS pressure and temperature variables were classified as Regulatory Guide 1.97 Type A and Category 1.

Considering the variety of RCS temperature indications and the RCS pressure indication included in the proposed BVPS PAM ITS and that the RCS Subcooling Margin Monitor is clearly identified as a backup indication in the Unit 2 UFSAR, the inclusion of the RCS Subcooling Margin Monitor is unnecessary to assure the ability to determine adequate core cooling. The RCS temperature and pressure indications required operable in the proposed BVPS PAM ITS provide sufficient assurance that RCS subcooling can be determined. In addition, since the RCS Subcooling Margin Monitor is specified in the Unit 2 CTS PAM, it will be relocated from the TS to the Licensing Requirements Manual (LRM). The LRM contains other BVPS relocated TS and provides a more appropriate level of control for a backup PAM indication. The relocation of this Unit 2 requirement also serves to make the Unit 1 and Unit 2 PAM ITS requirements the same.

C. Unit 2 Secondary System Radiation (Main Steam Discharge Radiation Monitors) is not included in the proposed PAM TS. Secondary system radiation was classified as a Type A and Category 1 variable in the Unit 2 Regulatory Guide 1.97 Report.

These effluent radiation monitors may be used to detect a Steam Generator Tube Rupture (SGTR). However, the primary indications used for diagnosis and response to a SGTR accident are RCS inventory losses (i.e., decreasing pressurizer level and pressure) and increasing water level in the affected steam generator. These indications provide the most reliable diagnosis of a SGTR accident to prompt the appropriate operator actions and are included in the proposed BVPS PAM ITS. Although the main steam discharge radiation monitors may provide an indication of steam generator tube leakage, earlier detection of steam generator tube leakage is provided by more sensitive radiation monitors such as the N-16 radiation monitors on each steam line, the steam generator blowdown radiation monitor, and the condenser air ejector radiation monitor. The use of these more sensitive radiation monitors to detect tube leakage is consistent with the EPRI Guidelines for PWR primary-to-secondary leak

detection. As such, the Unit 2 secondary system radiation indication is not the primary indication relied on to diagnose or mitigate a steam generator tube rupture accident. The proposed PAM ITS requires pressurizer level, RCS pressure, and SG water level indications operable. The proposed PAM ITS requirements are sufficient to ensure a SGTR is detected. In addition, considering the low levels of fuel leakage in modern fuel assemblies, and the relatively high range of the Unit 2 Main Steam Discharge monitors, these monitors can not be relied on to provide a timely or reliable indication of a SGTR.

It should be noted that the Main Steam Discharge Radiation Monitors are required OPERABLE in the CTS (Radiation Monitoring TS), however, the associated Actions permit unlimited continued operation when the monitors are inoperable.

As these monitors are effluent monitors they are proposed for relocation to the Offsite Dose Calculation Manual (ODCM) consistent with the location of the corresponding Unit 1 steam discharge radiation monitors. The ODCM contains other effluent monitors relocated from the TS and provides the appropriate level of control for this backup type of PAM indication. The relocation of these Unit 2 radiation monitors to the ODCM makes the location of these monitors the same for both Unit 1 and Unit 2.

D. Unit 2 neutron flux upper and lower range indication (i.e., the Gamma-Metrics full range neutron flux monitor) is not included in the proposed PAM TS and is not part of the CTS. The upper and lower range neutron flux indication was classified as a Type B and Category 1 variable in the Unit 2 Regulatory Guide 1.97 Report. The Unit 2 Westinghouse Nuclear Instrumentation System (i.e., source, intermediate and power range instrumentation) is proposed to be included in the PAM TS consistent with the corresponding Unit 1 PAM instrumentation.

The Unit 1 response to RG 1.97 identified the Westinghouse Nuclear Instrumentation System source, intermediate, and power range neutron flux variables as the required PAM instrumentation. The Unit 1 response to RG 1.97 classified the Westinghouse Nuclear Instrumentation System source, intermediate, and power range neutron flux variables as Type B and Category 1 variables. The Unit 2 response to RG 1.97 identified upper and lower range neutron flux variables that utilize the full range Gamma-Metrics instrumentation. The NRC subsequently approved both unit responses to RG 1.97. The Unit 1 SER for the Westinghouse Nuclear Instrumentation System to be used as post accident monitoring instrumentation was transmitted by separate NRC letter dated 11/17/95 (TAC NO. M81201). The NRC found the Westinghouse Nuclear Instrumentation System to be acceptable based on the availability of alternate means of assuring the reactor is in a shutdown condition. The availability of fully qualified core exit temperature and RCS hot and cold leg temperature indications and confirmation of the negative reactivity added by the boron injected into the RCS during accident conditions was considered by the NRC to be sufficient to allow operators to determine that the reactor is in a shutdown condition.

The Unit 2 full range Gamma-Metrics instrumentation is not specifically required to fulfill the initial indicating function of the neutron flux variable (i.e., to confirm reactor trip). The Westinghouse Instrumentation can perform this function. In addition, if the Westinghouse Nuclear Instrumentation was not available due to adverse conditions within containment, long term core stability can be verified in the same manner as approved for Unit 1 by core exit temperatures and RCS hot and cold leg temperatures (both of which are included in the proposed PAM TS).

Therefore, in order to make the Unit 1 and 2 PAM TS consistent and to provide an accurate indication of neutron flux to satisfy the required PAM function, the Westinghouse Nuclear Instrumentation System (i.e., source, intermediate, and power range indications) are included in the proposed PAM TS for both units. The status of the Unit 2 Gamma-Metrics instrumentation (not included in the CTS or proposed ITS) will remain unchanged.

E. <u>Unit 1 Radiation Level in Primary Coolant</u> (RCS letdown Radiation Monitors) is not included in the proposed PAM TS. The radiation level in the primary coolant was classified as a Type C Category 1 variable. The RCS letdown radiation monitors that perform this function are not in the Unit 1 CTS and Unit 2 does not list a corresponding RG 1.97 variable.

The affected radiation monitors are located in the RCS letdown line, which is isolated upon the receipt of a safety injection signal. Although the RCS letdown radiation monitors may be used as diagnostic indications of fuel leakage, for the purposes of the protection of the health and safety of the offsite general public, the key indicators of the need to implement offsite emergency protective actions at BVPS Units 1 and 2 are high core exit thermocouple indications, high containment radiation levels, failure of complete containment isolation and/or high containment pressures. Other indications, including the RCS letdown line radiation level, are most useful to validate the loss of barriers, but not as primary indications of the potential for, or the loss of the barrier.

The Emergency Action Levels in the E-Plan for BVPS Units 1 and 2 utilize the containment high range radiation monitors as an indication of a loss of one or more fission product barriers in the assessment of the declaration of a General Emergency level and the potential need for offsite radiological protection actions. The BVPS Unit 1 and 2 Core Damage Assessment also uses the containment high range radiation monitors as an input to the determination of core damage.

Core exit temperature, containment radiation level, containment isolation valve position, and containment pressure instrumentation are all included in the proposed PAM TS and provide adequate assurance that the PAM function can be accomplished.

Therefore, in order to make the Unit 1 and 2 PAM TS consistent and to only include the primary indications used to satisfy the PAM functions, the Unit 1 RCS radiation level indication is not included in the proposed PAM TS. The status of the Unit 1 RCS radiation monitors (not included in the TS) will remain

unchanged.

F. Unit 1 and 2 Containment Pressure (Narrow Range) is not included in the proposed PAM TS. The Containment Pressure Narrow Range indication is currently classified as Regulatory Guide 1.97 Type A, Category 1 for both BVPS Unit 1 and Unit 2. The narrow range containment pressure instrumentation is not included in the CTS. The Containment Pressure (Wide Range) instrumentation is proposed for inclusion in the PAM TS.

The containment pressure indication is provided for assessing inadequate containment cooling and for determining the potential challenge to containment integrity. The significant post accident use of containment pressure indication is as an indicator of the potential loss of a fission product boundary in the Emergency Action Levels in the E-Plan for BVPS Units 1 and 2. Containment pressure is a key indicator in the declaration of a General Emergency level and the potential need for offsite radiological protection actions. The wide range containment pressure instrumentation provides an adequate range and sensitivity for this purpose. The narrow range containment pressure instrumentation is limited in range and does not extend sufficiently beyond the design basis pressure to provide the required indication during all types of post accident conditions. As such, the containment pressure narrow range indication is not required in the PAM TS as it does not provide any additional information pertinent to post accident monitoring that is not provided by the containment wide range pressure indication.

The proposed PAM TS include 2 channels of wide range containment pressure indication. The proposed PAM requirements are adequate to assure the capability to monitor containment pressure after an accident (even considering a single failure). In addition, the inclusion of the Containment Pressure (Wide Range) instrumentation in the PAM TS is consistent with the CTS.

G. Unit 1 and 2 Containment Hydrogen Monitors are not included in the proposed PAM TS. The Containment Hydrogen Concentration is currently classified as a Regulatory Guide 1.97 Type A, Category 1 variable for Unit 1 and a Category 1 variable for Unit 2. Although the Hydrogen Monitors are associated with a Category 1 variable (both Units) and Type A (Unit 1 only) they are not included in the BVPS PAM ITS. The Hydrogen Monitors were removed from the ISTS by TSTF-447, Rev. 1 which implemented in the technical specifications the NRC rule change to 10 CFR 50.44 (standards for combustible gas control in light-water-cooled power reactors). In addition, the Hydrogen Monitors were removed from the current BVPS technical specifications by License Amendment numbers 259 (Unit 1) and 149 (Unit 2) issued May 19, 2004. Currently requirements for the BVPS Unit 1 and Unit 2 Hydrogen Monitors are maintained in the BVPS Licensing Requirements Manual (LRM).

Non-Type A or Category 1 Variables Added:

H. Unit 1 AFW Flow was included in the proposed PAM TS. The Unit 1 AFW Flow indication is classified as a Regulatory Guide 1.97 Type D, Category 2 variable. This indication is in the CTS requirements for PAM and provides an important indication, similar to the Unit 2 AFW Flow indication, which was classified Regulatory Guide Type A, Category 1. The inclusion of this Unit 1 indication will help to make the PAM requirements for both units consistent. As the Unit 1 AFW Flow was not designed as a Regulatory Guide 1.97 Type A or Category 1 instrument, there is only one channel per SG. The AFW Flow indication is included in the proposed PAM ITS in a combined Function with SG Level (Narrow Range) indication. The combined Function is listed as "Secondary Heat Sink Indication" on PAM Table 3.3.3-1. The use of this combined Function allows two channels of indication to be specified for each SG. The required two channels of this Function can be met by any combination of the (3) SG Level (Narrow Range) channels and the single Unit 1 AFW Flow channel for each SG. Any of these channels provide the required post accident indication to assure an available heat sink.

I. Unit 2 Reactor Vessel Water Level was included in the proposed PAM TS. The Unit 2 Reactor Vessel Water Level indication is classified as a Regulatory Guide 1.97 Type B, Category 2 variable. This indication is in the CTS requirements for PAM and provides an important indication similar to the Unit 1 Reactor Vessel Water Level indication which was classified Regulatory Guide Type B, Category 1. The inclusion of this Unit 2 indication will help to make the PAM requirements for both units consistent.

J. Unit 2 Refueling Water Storage Tank (RWST) Level (Wide Range) is added to the proposed PAM TS. The Unit 2 RWST Level (Wide Range) indication is classified as a Regulatory Guide 1.97 Type D, Category 2 variable. However, this Unit 2 indication was determined to provide important information for Unit 2 similar to the Unit 1 RWST Level indication which was classified as a Regulatory Guide 1.97 Type A, Category 1 variable. The inclusion of this Unit 2 indication will help to make the PAM requirements for both units consistent. The inclusion of this indication in the PAM TS represents a new TS requirement for both units.

K. Unit 2 Containment Isolation Valve Position Indication is added to the proposed PAM TS. The Unit 2 Containment Isolation Valve Position indication is classified as a Regulatory Guide 1.97 Type C, Category 2 variable. However, this Unit 2 indication was determined to provide important information for Unit 2 similar to the Unit 1 Containment Isolation Valve Position indication which was classified as a Regulatory Guide 1.97 Type B, Category 1 variable. The inclusion of this Unit 2 indication will help to make the PAM requirements for both units consistent. The

inclusion of this indication in the PAM TS represents a new TS requirement for both units.

L. Unit 1 and Unit 2 High Head Safety Injection (SI) Automatic Injection Header Flow is added to the proposed PAM TS. The High Head SI Automatic Injection Header Flow indication is classified as a Regulatory Guide 1.97 Type D, Category 2 variable for both units. This indication is not in the CTS. As this variable is not classified as a Type A or Category 1 variable it was not designed as such. There is only a single channel of indication available for each unit. This variable has been identified as the preferred control room indication for confirming automatic SI initiation. Confirming automatic SI initiation is important in order to determine if manual action is needed to assure high head SI initiation. Although this variable does not meet the criteria for inclusion in the PAM ITS, it is included in the proposed ITS for both units in recognition of its importance in confirming automatic high head SI initiation.

As this indication does not meet the Regulatory Guide 1.97 classification requirement for inclusion in the PAM TS and was not designed with redundancy, it is assigned the same Action for a single inoperable channel as the other PAM Functions. The Action to restore the inoperable channel to operable status within 30 days or submit a report to the NRC is sufficient for this instrument Function. The standard Action for a single inoperable channel is acceptable for this Function considering that the Function is not required to be in the PAM ITS and that it does not meet the stringent design requirements of the other Functions that are required to be in the PAM TS. In addition, acceptable alternate indications exist in the control room to confirm automatic high head SI initiation. An alternate method of verifying SI initiation can be provided by the High Head SI pump amperage indication, the High Head SI header pressure indication, and the SI automatic valve position indication. A combination of these indications provides an acceptable long term alternate method to verify automatic SI initiation until the single channel of high head flow indication is restored to operable status.

6. The proposed PAM TS includes Function number 18, " Secondary Heat Sink Indication" and the associated footnote "d" which states " The required channels may be satisfied by using any combination of SG Water Level (Narrow Range) channels and Auxiliary Feedwater Flow channels such that 2 channels are OPERABLE for each SG." The proposed new Function combines the instrument channels for SG level (narrow range) and Auxiliary Feedwater Flow (AFW). The CTS for PAM only includes the AFW Flow indication. The addition of the SG Level (Narrow Range) represents a new TS requirement for the BVPS units. The ability to maintain the SG level within the NR indication also confirms an adequate water volume for decay heat removal as well as confirming the associated AFW system capability to feed the SG. The addition of the SG Water Level NR channels to the PAM TS makes the proposed change possible. The allowance to combine these indications into a single Function is acceptable as these indications serve a similar purpose (i.e., the maintenance of SG level to provide an

adequate heat sink). The use of either indicator for this purpose is consistent with the Westinghouse Emergency Response Guidelines as implemented in the BVPS Unit 1 and Unit 2 Emergency Operating Procedures. In addition, the Unit 1 AFW Flow is not a Regulatory Guide 1.97 Type A or Category 1 instrument, and only one channel is available per SG. As such, the proposed new Function that allows AFW flow and SG level to be combined permits Unit 1 to have 2 channels of indication for each SG and makes both units the same. In addition, the use of the combined "Secondary Heat Sink Indication" Function in the PAM ITS was previously approved by the NRC for the D. C. Cook plant in their conversion to the ISTS.

ITS 3.3.4 Remote Shutdown Instrumentation

JUSTIFICATION FOR DEVIATION (JFD)

1. ISTS SR 3.3.4.2 requires the Remote Shutdown System control and transfer switches to be verified operable. The corresponding BVPS CTS requirements for the Remote Shutdown System (CTS 3.3.3.5) do not include any operability or surveillance requirements for control and transfer switches. The CTS requirements only address monitoring instrumentation. In order to conform more closely to the ISTS requirements, BVPS is including requirements for control and transfer switches in proposed ITS 3.3.4. However, the ISTS "bracketed" or optional surveillance Frequency of 18 months is revised to 36 months. This change is made to be more consistent with the current BVPS test frequency for transfer and control switches. Currently BVPS verifies the operability of these switches every 54 months in existing plant procedures outside of the TS. The control and transfer circuits verified by this surveillance are designed to be highly reliable and are not subject to excessive wear from daily use or being in a harsh environment. In addition, the inclusion of this instrumentation in the TS provides additional assurance that adequate post maintenance testing will be performed to ensure operability after modifications or design changes. Thus, although the proposed ITS test frequency is different than the bracketed ISTS Frequency, it is more conservative than the existing BVPS test requirements for this instrumentation and will provide additional assurance the required control and transfer circuits are maintained operable. Because of this change in Frequency the SRs are renumbered to place the longest surveillance frequency last in the list.
2. ISTS SR 3.3.4.4 states "Perform TADOT of the reactor trip breaker open/closed indication." The Frequency for the SR is 18 months. The corresponding CTS 3.3.3.5, "Remote Shutdown Instrumentation", and the proposed BVPS ITS LCO 3.3.4 for Remote Shutdown Instrumentation do not include the requirement for RTB position indication. The BVPS Unit 1 and 2 Emergency Shutdown Panels do not include RTB indication. This change to the ISTS is acceptable because reactor trip breaker indication is not required to ensure the Reactivity Control Function is capable of maintaining the unit in a shutdown condition. Westinghouse plants without remote RTB indication and control assure (via the applicable plant procedures) that RTBs are verified open prior to evacuating the control room. The Emergency Shutdown Panels include sufficient instrumentation and controls to monitor and control core reactivity remotely once the RTBs are open.
3. ITS SR 3.3.4.1 and SR 3.3.4.2 are revised to incorporate a clarification consistent with the method used to distinguish the applicable required channels on Table B 3.3.4-1. There are two types of required channels specified in the Bases Table (i.e., indication and control/transfer). SRs 3.3.4.1 and 3.3.4.2 are applicable to the indication channels. ITS SR 3.3.4.3 is applicable to the control and transfer function channels. By more clearly labeling ITS SR 3.3.4.1 and 3.3.4.2 as required for "indication" channels, the proposed change provides a clarification that helps to avoid the potential for confusing the intended application of these SRs to channels other than indication channels.

ITS 3.3.5 Loss of Power (LOP) Diesel Generator (DG) Start and Bus Separation Instrumentation

JUSTIFICATION FOR DEVIATION (JFD)

1. ISTS LCO 3.3.5 is titled Loss of Power (LOP) Diesel Generator (DG) Start Instrumentation and the LCO requires "[Three] channels per bus of the loss of voltage Function and [three] channels per bus of the degraded voltage Function to be OPERABLE." The ISTS LCO title and requirements are revised to more closely conform to the BVPS undervoltage relay design and CTS licensing basis. The proposed BVPS LCO title includes the bus separation function of the undervoltage relays as well as the DG start function. In addition, the BVPS specific LCO operability requirements refer to the instrumentation specified in Table 3.3.5-1 instead of listing the instrumentation in the LCO like the ISTS.

   In order to better understand the changes made to the ISTS 3.3.5, the BVPS Unit 1 and 2 under voltage and degraded grid voltage protection is described below.

   The Unit 1 loss of voltage protection consists of two relays for each of the 4160 V emergency buses. One relay actuates to open the normal supply breakers for the associated emergency buses (providing the bus separation function). The other loss of voltage relay provides a start signal for the DG associated with the bus. Both loss of voltage relays have the same nominal trip setpoint and Allowable Value (with different time delays).

   The Unit 2 loss of voltage protection consists of three relays for each 4160 V emergency bus. Two relays on each bus actuate to open the normal supply breakers for the associated emergency buses (with a two-out-of-two logic per bus) to provide the bus separation function. The other loss of voltage relay provides a start signal for the associated DG. All three loss of voltage relays have the same nominal trip setpoint and Allowable Value (with different time delays).

   In addition to the loss of voltage protection, degraded voltage protection for both Units is provided by two relays on each 4160 V emergency bus and two relays on each 480 V emergency bus. The two relays on each bus actuate upon a reduced voltage condition that exists for an extended time. The relays actuate (in a two-out-of-two logic per bus) to open the normal supply breakers and separate the affected emergency bus from the degraded voltage supply. The two-out-of-two logic helps prevent a spurious relay actuation from causing bus separation.

   Thus, the BVPS protection design consists of loss of voltage and degraded voltage relays that function to separate the emergency busses from their normal power supply and loss of voltage relays that directly start the associated emergency DG. In addition, each units' design includes an automatic DG start signal that is generated when either series connected normal supply breaker for an emergency bus is opened (i.e., upon bus separation).

   The proposed changes to the ISTS LCO requirements and title are made to incorporate

the various BVPS specific undervoltage relay requirements. The change is necessary due to the number and variety of BVPS specific instrument requirements addressed by this LCO. The revised LCO title includes the BVPS bus separation function to more accurately describe the different BVPS loss of voltage and degraded voltage instrument functions consistent with the current licensing basis. In addition, due to the number and variety of BVPS specific relay requirements, a Table is used to present the required instrument channels in a concise and clear format. The proposed Table is similar to the ISTS Reactor Trip and ESFAS Instrumentation Tables used in ISTS 3.3.1 and ISTS 3.3.2. The proposed Table format provides a better presentation of the various instrument operability requirements including the different setpoints and applicable Action Conditions for each BVPS ITS 3.3.5 instrument function. The use of this Table format for presenting the details of the ITS 3.3.5 LCO requirements is consistent with the use of Tables in the ISTS Reactor Trip System (RTS) and ESFAS Instrumentation LCOs. As such the proposed change maintains consistency of format within the Instrumentation section of the ITS.

2. Not used.

3. The ISTS 3.3.5 Actions are revised by the addition of a new Action Condition A. The addition of this new Action Condition results in re-lettering the subsequent ITS Action Conditions. The proposed new Action is necessary due to the addition of Table 3.3.5-1 (described in JFD 1 above) which lists the applicable Action Conditions for each instrument function. The proposed Action Condition A is similar to the corresponding Condition A in the ISTS RTS and ESFAS Actions which are also used to refer the user to the Table associated with each LCO. The proposed Action Condition A directs the user to Table 3.3.5-1 for the specific Action requirements applicable to each instrument function. Due to the variety of BVPS instrumentation and Action Conditions, the Table format is used to present this information more clearly. Proposed Table 3.3.5-1 lists the applicable Action Conditions for each of the BVPS ITS 3.3.5 instrument functions. The use of the new Action Condition A to refer to Table 3.3.5-1 is consistent with the ISTS RTS and ESFAS Action Conditions and associated Tables. As such, the proposed change maintains consistency of format and presentation within the Instrumentation section of the ITS.

4. ISTS 3.3.5 Action Condition B states "one or more Functions with two or more channels per bus inoperable and requires all but one channel to be restored to operable status. ISTS Action Condition B is revised (as ITS Action Condition C) to delete the phrase "or more" from the Condition statement and the phrase "all but" from the restoration requirement. The proposed BVPS Action Condition would apply to only two channels per bus and require one channel to be restored to operable status. The proposed change is acceptable because it makes the ISTS Action conform more closely to the BVPS specific design. The BVPS instrument channels for which this Action is applicable are designed with two channels per bus. Therefore, as the Action is stated in terms of channels per bus, the Condition of "two or more" and the requirement to restore "all but one" are not applicable to the BVPS design and are deleted from the BVPS specific implementation of this TS. The proposed change makes the Actions more clear considering the BVPS design.

5. The Note in ISTS Action Condition A (ITS Action Condition B) states "the inoperable

channel may be bypassed for up to 4 hours for surveillance testing of other channels." The standard ISTS note is revised to incorporate a limitation that the corresponding instrument channels, electrical bus, and DG in the other train must be operable before the allowance of the note may be applied. The proposed change ensures that the other protection train is operable before the provision of the note can be applied. The proposed change to the standard note is necessary due to the BVPS specific design of the instrument channels for which this condition is applicable. The BVPS design of the affected instrumentation consists of two channels per bus and requires that both channels trip to actuate. Therefore, when one channel is bypassed the instrument function is made unavailable. The proposed additional requirement to verify the other train operable before bypassing a channel provides assurance that the safety function remains available. The proposed provision to the ISTS Note is similar to several such notes used in the ISTS RTS and ESFAS Actions that allow one entire actuation logic train of RTS or ESFAS to be bypassed provided the other train is operable. The allowance to bypass one channel and render the instrument function unavailable to perform required testing is acceptable due to the short time allowed by the note (4 hours) and the proposed addition to the note that requires the other train to be operable. As such, the time in which the affected instrumentation is unavailable is sufficiently limited to minimize risk (based on the acceptability of bypassing an entire train of RTS and ESFAS for the same amount of time) and that the capability to perform the required safety function is preserved by requiring the other train to be operable. In addition, the provision of the note allows routine surveillance testing to be performed. Failure to perform the required surveillance testing within the specified frequency could result in failure to meet the LCO. In this case, the Actions for failing to meet the LCO would result in declaring the affected DG inoperable. Considering that the most probable outcome of performing any surveillance is that the affected plant equipment is found to be operable, requiring the affected DG to be declared inoperable for failure to perform the required undervoltage relay surveillance is overly conservative and unnecessary to assure the operability of the affected instrument channel.

6. The ISTS 3.3.5 Actions are revised by the addition of a new Action Condition. The proposed BVPS specific Action Condition D states that with "one or more Functions with one channel per bus inoperable" the inoperable channel must be restored to operable status in 1 hour. The new Action condition is necessary due to the BVPS design which includes electrical busses with only one channel of undervoltage instrumentation. The other ISTS Action conditions address multiple channels per bus. The proposed change provides an Action Condition applicable to a single channel design that provides a Completion Time (1 hour) consistent with the ISTS Action Condition B Completion Time. ISTS Action Condition B addresses two or more inoperable channels per bus (i.e., potentially no operable channels left on the bus) and allows 1-hour to restore all but one channel to operable status. Similar to ISTS Action Condition B, the proposed ITS Action Condition D allows a 1-hour restore time when the single channel per bus is inoperable. The proposed Completion Time for this condition is sufficiently short to minimize risk and provide some time to restore the channel to operable status prior to declaring the associated DG inoperable. In addition, the proposed Action Condition maintains consistency with the ISTS Allowance provided in ISTS Condition B for two or more inoperable channels on a bus.

7. The bracketed (optional) ISTS surveillance requirement (ISTS SR 3.3.5.) for a channel check is deleted consistent with the CTS requirements for this instrumentation. All the subsequent ISTS SRs are renumbered accordingly. The channel check requirement results in verifying the voltage of a bus that is monitored by an undervoltage relay. The verification of bus voltage does not provide a meaningful operability verification of an associated undervoltage relay channel (i.e., the indicated bus voltage does not confirm relay operation or status). In addition, bus voltage indications and alarms are readily available to operators and this additional check does not provide significant additional assurance of bus voltage status. Therefore, the optional ISTS surveillance does not contribute a significant safety benefit. The proposed change to the ISTS maintains the current BVPS licensing basis requirements for this instrumentation.

8. ISTS SR 3.3.5.2 (ITS SR 3.3.5.1) specifies that a TADOT be performed on the undervoltage relay instrumentation. The ISTS SR is revised by the addition of a Note that states: "Verification of setpoint not required." The proposed change is consistent with the SR requirements for undervoltage relays in the ISTS ESFAS specification. As such, the proposed change improves the internal consistency of the ISTS with regard to the TADOT surveillance requirements for undervoltage relay instrumentation. The ISTS TADOT corresponds to the CTS Channel Functional Test surveillance requirement for this instrumentation. As such, it should also be noted that the proposed exception to the verification of setpoints is consistent with the requirements of the CTS CFT definition which does not require setpoint verification.

   The relay instrumentation associated with this Function consists of simple contacts operated by a solid state relay driving auxiliary relays that are not located where they are subject to an adverse environment. The associated instrument signal from the relay is not processed through complicated circuitry consisting of a variety of electronic components subject to age or environmental affects that may contribute to significant setpoint drift. In addition, setpoint verification requires removal of the associated relay which reduces the availability of the protection function, increases equipment wear, and introduces the potential for error by requiring repeated removal and installation of the equipment. The required Channel Calibration surveillance performed on this instrumentation provides the required setpoint verification and is adequate to ensure the relay instrumentation remains within the required setpoint tolerance.

9. The ISTS SR 3.3.5.3 requires a Channel Calibration be performed for the relay instrumentation addressed by LCO 3.3.5. The ISTS Channel Calibration surveillance requirement includes the Trip Setpoints and Allowable Values for each type of loss of power relay. The proposed ITS SR 3.3.5.2 also specifies a channel calibration be performed on this instrumentation. However, the BVPS proposed SR does not include the trip setpoints or allowable values within the body of the SR. The BVPS specific format proposed for the Loss of power Specification includes a table of requirements (ITS Table 3.3.5-1) similar to the Tables used in ISTS 3.3. (Reactor Trip System) and ISTS 3.3.2 (ESFAS). The proposed ITS Table 3.3.5-1 specifies the required Allowable Values for each type of Loss of Power instrument addressed in the LCO. The Allowable Values specified in proposed Table 3.3.5-1 are consistent with the CTS requirements for this instrumentation. As such, the proposed change maintains the CTS requirements for this instrumentation in a format that is consistent with the Table formats used for other

instrumentation in the ISTS.

The BVPS CTS requirements for this instrumentation are based on a nominal trip setpoint methodology. The nominal trip setpoints associated with the BVPS instrumentation (including the RTS and ESFAS) are specified outside the TS in the Licensing Requirements Manual. The BVPS CTS only specify the Allowable Value for each instrument. As such, the ISTS 3.3.5 Channel Calibration requirements are revised to include only the Allowable Value consistent with the corresponding CTS requirements. In addition, the nominal trip setpoint methodology requires that the trip setpoint of each instrument be maintained within a calibration tolerance that is determined in the setpoint study. Due to the nominal trip setpoint methodology, a required setpoint tolerance for each instrument is established to ensure instrument operability. The nominal trip setpoint methodology requires that during the channel calibration the setpoint be returned to the nominal value. As such, the setpoint tolerance requirement ensures instrument operability by providing a means to monitor and control instrument drift between calibrations. Therefore, specifying two limits in the TS for each setpoint is unnecessary and inconsistent with the current licensing basis.

10. The ISTS 3.3.5 surveillance requirements do not specify the performance of a response time test. Proposed ITS SR 3.3.5.3 specifies that ESF response times be verified at a Frequency of 18 months on a STAGGERED TEST BASIS. The proposed change to the ISTS surveillance requirements is necessary because the instrumentation addressed by ISTS LCO 3.3.5 was moved from the ESFAS Instrumentation specification into ISTS 3.3.5. In the CTS ESFAS specification, ESF response time testing was required in CTS SR 4.3.2.1.3. Individual ESF instrument response times are specified in the Licensing Requirements Manual (LRM) outside the TS. Response times specified in the LRM are assumed in the safety analysis. As such, the proposed change is acceptable because it is necessary to confirm assumptions of the safety analysis and because it maintains the current licensing basis for this instrumentation.

ITS 3.3.6 Containment Purge and Exhaust Isolation Instrumentation

JUSTIFICATION FOR DEVIATION (JFD)

1. The proposed ITS 3.3.6, "Containment Purge and Exhaust Isolation Instrumentation" does not contain requirements for the Unit 1 automatic or manual Purge and Exhaust isolation. Proposed ITS 3.3.6 is designated as only applicable to Unit 2.

   The current BVPS design basis fuel handling accident of record (for both units) does not credit any automatic or manual actuation to mitigate a fuel handling accident when moving fuel assemblies that are not recently irradiated or fuel over assemblies that are not recently irradiated. Recently irradiated fuel is defined in the TS Bases as "...fuel that has occupied part of a critical reactor core within the previous 100 hours." Although BVPS does not currently have a safety analysis that supports moving recently irradiated fuel assemblies, TS requirements have been retained to address the condition of moving recently irradiated fuel assemblies. The retained TS requirements applicable when moving recently irradiated fuel or fuel assemblies over recently irradiated fuel assemblies include Containment Purge and Exhaust System isolation for Unit 2 and Containment Purge and Exhaust System effluent filtration for Unit 1. Proposed ITS 3.9.3, "Containment Penetrations" contains these BVPS unit specific requirements for the Containment Purge and Exhaust System. The current fuel handling accident analysis and CTS requirements for moving recently irradiated fuel were approved by the NRC in Amendments 241 for Unit 1 and 121 for Unit 2 (dated 8/30/01).

   The Unit 1 requirements for Containment Purge and Exhaust isolation are being relocated to the LRM because BVPS Unit 1 can not credit Containment Purge and Exhaust System isolation to mitigate the consequences of a fuel handling accident in containment. Instead, Unit 1 must rely on filtration of the effluent by an operable train of the Supplemental Leakage Collection and Release System (SLCRS) when necessary to mitigate the consequences of a fuel handling accident inside containment. Unit 1 must rely on filtration of the effluent instead of isolation because the Containment Purge and Exhaust System ductwork where the radiation monitors are located is not designed to withstand a seismic event. Although the radiation monitors provide an isolation signal to the purge and exhaust valves to close, no credit for the isolation signal may be taken in the Unit 1 design basis fuel handling accident. As stated in the NRC Safety Evaluation Report (SER) for Unit 1 Amendment 23 dated 12/12/79 (which added the TS requirement for the containment air to be exhausted through SLCRS); "However, since the purge exhaust ductwork inside the containment containing the radiation monitors is non-seismic we have made dose calculations assuming the ductwork and monitors are damaged during a seismic event. In such an event we have assumed there is no containment isolation". Therefore, based on the SER applicable to the Unit 1 Containment Purge and Exhaust System, any Unit 1 safety analysis performed to support the movement of recently irradiated fuel would credit filtration instead of isolation. The proposed ITS reflect the Unit 1 Containment Purge and Exhaust System specific design and licensing bases.

2. The Applicability for ISTS 3.3.6, "Containment Purge and Exhaust Isolation Instrumentation" refers to Table 3.3.6-1. Table 3.3.6-1 specifies the Applicability for each required instrument as Modes 1, 2, 3, and 4 and during movement of recently irradiated fuel assemblies within containment. The BVPS proposed ITS 3.3.6 applicability is stated as "During movement of recently irradiated fuel assemblies within the containment, and During movement of fuel assemblies over recently irradiated fuel assemblies within the containment." The BVPS applicability for Containment Purge and Exhaust Isolation Instrumentation does not include Modes 1, 2, 3, and 4 because in these Modes the BVPS Containment Purge and Exhaust Isolation Valves are maintained deactivated in the closed position (ITS 3.6.3, SR 3.6.3.1). Therefore, automatic isolation instrumentation is not required in these Modes. The proposed ITS applicability is consistent with the CTS applicability for these requirements. The proposed ITS applicability is stated in the more conventional applicability format of the ISTS and proposed Table 3.3.6-1 is revised to eliminate the separate ISTS column for Applicability.

   The BVPS specific version of ISTS 3.3.6 is simpler than the ISTS in that there are less instrument functions and only one Applicable Mode. All the BVPS instrument Functions required operable in ITS 3.3.6-1 have the same Mode of applicability. Therefore, a separate list of applicable Modes in Table 3.3.6-1 is not required and provides no added value. In addition, the proposed ITS applicability helps to simplify and clarify the TS requirements especially Table 3.3.6-1.

3. ISTS Condition B states "One or more Functions with one or more manual or automatic actuation trains inoperable, or two or more radiation monitoring channels inoperable, or Required Action and associated Completion Time of Condition A not met." The Condition is modified by a Note that states "Only applicable in MODE 1, 2, 3, or 4." ISTS Action Condition B is deleted for the BVPS specific ITS 3.3.6 and all subsequent Action Conditions are re-lettered accordingly.

   The ISTS Action Condition is applicable to those plants that require automatic Containment Purge and Exhaust Valve isolation during Modes 1-4. The BVPS CTS and ITS do not require automatic Containment Purge and Exhaust Valve isolation during Modes 1-4. In these Modes, the BVPS TS (ITS 3.6.3, SR 3.6.3.1) require that the Containment Purge and Exhaust Isolation Valves be maintained deactivated in the closed position. Therefore, ISTS Action Condition B is not applicable to BVPS.

4. ISTS Action Condition C is modified by a Note that states "Only applicable during movement of recently irradiated fuel assemblies within containment." The applicability is specified in ITS Table 3.3.6-1. The ISTS Action Condition Note is deleted from the BVPS specific ITS 3.3.6.

   ISTS Action Condition B is only applicable when in Modes 1-4 and ISTS Action Condition C is only applicable during movement of recently irradiated fuel assemblies within containment. The Actions of each of these Conditions are only applicable to the specified plant conditions. The ISTS Action Condition Notes in each of these Conditions are necessary to assure each Action Condition is properly applied according to the plant condition the Actions were designed to address. The affected Notes are not required in the BVPS specific ITS 3.3.6 Action Conditions because the BVPS specific ITS 3.3.6 is only applicable "During movement of recently irradiated fuel assemblies within the

containment, and During movement of fuel assemblies over recently irradiated fuel assemblies within the containment." The BVPS version of this TS does not have different plant conditions addressed by different Action Conditions. In the BVPS ITS 3.3.6, all Action Conditions are applicable "During movement of recently irradiated fuel assemblies within the containment, and During movement of fuel assemblies over recently irradiated fuel assemblies within the containment." Therefore, a note to distinguish the plant condition for which the Action Condition was intended is not required.

5. ISTS 3.3.6 Condition C states in part, "One or more Functions with one or more manual or automatic actuation trains inoperable." This ISTS Action addresses automatic actuation trains and manual channels. Other Action Conditions address the required radiation monitor channels. The corresponding BVPS ITS 3.3.6 Condition B states, "One or more manual initiation channels inoperable."

   The proposed change to the ISTS Action Condition is necessary to clarify the differences between the Containment Purge and Exhaust Isolation Instrumentation described in the ISTS and the actual BVPS system. The ISTS 3.3.6 Containment Purge and Exhaust Isolation Instrumentation includes requirements for Solid State Protection System (SSPS) Functions more typically associated with plants that must have Containment Purge and Exhaust Isolation Instrumentation operable in Modes 1-4. These SSPS Functions include requirements for operable trains of Automatic Actuation Logic and Actuation Relays specified in ISTS Table 3.3.6-1. The corresponding BVPS instrumentation for Containment Purge and Exhaust Isolation is not required operable in Modes 1-4 and is not designed to perform the isolation function via the SSPS Actuation Logic and Relays. The BVPS isolation instrumentation consists of two radiation monitor channels and a manual hand switch (channel) for each isolation valve. Therefore, the ISTS Action Condition that refers to "One or more Functions with one or more manual or automatic actuation trains inoperable" is simplified to specify the more BVPS specific condition of "One or more manual initiation channels inoperable." As there are other Action Conditions that address the required radiation monitor channels, the proposed change to this ISTS Action is acceptable because it is consistent with the BVPS system design.

6. ISTS Required Action C.2 states "Enter applicable Conditions and Required Actions of LCO 3.9.4, "Containment Penetrations," for containment purge and exhaust isolation valves made inoperable by isolation instrumentation." The corresponding ITS Required Action B.2 states "Enter applicable Conditions and Required Actions of LCO 3.9.3, "Containment Penetrations," for containment purge and exhaust isolation valves made inoperable by isolation instrumentation." This change is acceptable because the LCOs in Section 3.9, "Refueling Operations," have been renumbered to account for BVPS specific changes made in Section 3.9.

7. ISTS 3.3.6 Action Condition C states in part, "Two or more radiation monitoring channels inoperable." The corresponding BVPS ITS 3.3.6 Condition B states, "Two radiation monitoring channels inoperable."

   The proposed change to the ISTS Action Condition is necessary because BVPS only has two radiation monitor channels associated with the Containment Purge and Exhaust Isolation system. The ISTS is written to encompass plant designs with several different

radiation monitoring channels used for input to the Containment Purge and Exhaust Isolation system. As such, the proposed change more accurately reflects the BVPS system design.

8. ISTS 3.3.6 includes requirements for Solid State Protection System (SSPS) Functions more typically associated with plants that must have Containment Purge and Exhaust Isolation Instrumentation operable in Modes 1-4. These SSPS Functions include requirements for two operable trains of Automatic Actuation Logic and Actuation Relays specified in ISTS Table 3.3.6-1 (Function 2) and SRs 3.3.6.2, 3.3.6.3, and 3.3.6.5 applicable to Function 2 in ISTS Table 3.3.6-1. SRs 3.3.6.2, 3.3.6.3, and 3.3.6.5 require the performance of TS defined tests (TS Section 1.0) for ACTUATION LOGIC, MASTER RELAYS, and the SLAVE RELAYS. These TS defined tests are specific to the SSPS Automatic Actuation Logic and Actuation Relays Functions. The design of the BVPS Containment Purge and Exhaust Isolation Instrumentation does not include the SSPS Functions described in the ISTS. Therefore, Function 2 on ISTS Table 3.3.6-1 and the associated surveillances (SRs 3.3.6.2, 3.3.6.3, and 3.3.6.5) are deleted from the BVPS specific version of ISTS 3.3.6. The remaining Function and surveillances are renumbered accordingly. The proposed change to the ISTS maintains the TS requirements for this instrumentation more consistent with the CTS and with the BVPS specific design.

9. ISTS Table 3.3.6-1 specifies the Containment Purge and Exhaust Isolation Instrumentation Functions required operable. The ISTS Table includes Functions 3.b, 3.c, 3.d and 4 for additional radiation monitors and the Containment Isolation signal - Phase A. The corresponding BVPS specific ITS Table 3.3.6-1 does not include these additional Containment Purge and Exhaust Isolation Instrumentation Functions. This change is acceptable because the BVPS Containment Purge and Exhaust Isolation Instrumentation does not include these additional Functions. The proposed change to the ISTS makes the BVPS specific version of this TS more consistent with the CTS requirements and the design of the BVPS Containment Purge and Exhaust Isolation Instrumentation system.

10. ISTS 3.3.6 requires two channels of manual initiation to be operable. The ISTS requirement for manual initiation is revised to be consistent with the BVPS Unit 2 manual switch design. BVPS does not have a train related manual initiation switch for the Containment Purge and Exhaust Valve isolation function. The BVPS Containment Purge and Exhaust system isolation valves are each operated manually by their respective control switches. As such, the BVPS version of ISTS 3.3.6 requires one channel of manual initiation per valve to be operable instead of the ISTS requirement for two channels of manual initiation.

ITS 3.3.7 Control Room Emergency Ventilation System (CREVS) Actuation Instrumentation

JUSTIFICATION FOR DEVIATION (JFD)

1. ISTS Conditions A and B have a bracketed Note for the associated Required Actions. The Note states "Place in the toxic gas protection mode if automatic transfer to toxic gas protection mode is inoperable." The BVPS design no longer includes a toxic gas mode of operation for the control room ventilation. Therefore, the Note is not applicable to BVPS and is deleted for both Conditions from the BVPS specific implementation of the ISTS.
2. ISTS Required Action B.2 offers an option to place both CREVS trains in service. Action B.2 is deleted from the BVPS specific implementation of the ISTS. The BVPS design of the emergency pressurization and filtration system includes a preferred fan interlock scheme that prevents more than one ventilation fan from running at the same time. Thus, BVPS can not utilize the ISTS Action option to run both trains of CREVS at the same time.
3. ISTS Action Condition D addresses the applicability of fuel movement involving recently irradiated fuel. The ISTS Condition and Required Action are revised to be consistent with the BVPS specific Applicability for fuel movement involving recently irradiated fuel. The BVPS CTS requirements, which are based on the current safety analysis for a fuel handling accident, specify not only the movement of recently irradiated fuel but include fuel movement over recently irradiated fuel. The proposed changes to the ISTS Action Condition make the BVPS specific implementation of these requirements consistent with the corresponding CTS requirements.
4. ISTS SRs 3.3.7.3, 3.3.7.4, and 3.3.7.5 require the performance of the Solid State Protection System (SSPS) defined surveillance tests for actuation logic, master relays, and slave relay tests at various frequencies. The surveillances are applicable to Function 2 on ISTS Table 3.3.7-1, "Automatic Actuation Logic and Actuation Relays." The ISTS includes Function 2 on Table 3.3.7-1 and the associated surveillance requirements for those plants designed to utilize the SSPS Logic, Master and Slave Relays for the high radiation and manual actuation functions listed on Table 3.3.7-1. The BVPS proposed ITS 3.3.7 does not include Function 2 on Table 3.3.7-1 or the associated SSPS surveillance tests. The BVPS control room ventilation design does not utilize the SSPS circuitry described by Function 2 on Table 3.3.7-1 for the high radiation or manual actuation functions. The BVPS CIB instrumentation does utilize the SSPS for actuation of the CREVS but the requirements for this instrumentation (including all surveillances) are specified in ITS 3.3.2, ESFAS Instrumentation" as denoted on ITS Table 3.3.7-1. Therefore, the ISTS Function 2 and associated SSPS surveillance tests are not required to verify the operability of the BVPS control room ventilation instrumentation and are deleted from the proposed BVPS specific ITS 3.3.7. Subsequent SRs and Functions are renumbered as necessary.
5. ISTS Table 3.3.7-1 specifies the Modes of operation where the instrument Functions are

required operable. The ISTS Table specifies Modes 5 and 6 for the operability of manual and radiation instrument channels. The Mode 5 and 6 applicability is in addition to the Modes 1-4 applicability and the applicability for fuel movement involving recently irradiated fuel. The ISTS bases explains that the Mode 5 and 6 requirement is to address the additional design basis accident of a waste gas decay tank rupture. In some plant designs, the waste gas decay tanks are located such that a failure of the tank could result in excessive control room doses. For such plants, the control room ventilation system must be capable of emergency mode of operation in Modes 5 and 6.

The BVPS specific analyses for waste gas decay tank rupture does not require the control room ventilation be placed in the emergency mode of operation to limit the dose. The BVPS waste decay tanks are not located where a rupture would pose a challenge to the dose requirements for the control room. Therefore, the ISTS Mode applicability of Modes 5 and 6 is not applicable to BVPS and is deleted from the BVPS specific version of ITS 3.3.7. In addition, the elimination of this applicability is consistent with the corresponding CTS requirements for the containment ventilation system.

6. ISTS Table 3.3.7-1 specifies the Modes of operation where the instrument Functions are required operable. The ISTS Table specifies Modes 1 through 4 for the operability of radiation instrument channels. The Mode 1-4 applicability requirement for the radiation monitor instrument channels is deleted from the BVPS specific ITS 3.3.7. The current BVPS safety analyses do not assume the operation of the radiation monitors for actuation of the control room ventilation emergency mode of operation (i.e., isolation, pressurization, and filtration) for any design basis accident. The current safety analyses for all applicable design basis accidents (except LOCA) assume manual initiation of the control room ventilation emergency mode of operation (including damper isolation, and start of the pressurization and filtration fan system). The LOCA accident analysis assumes an automatic control room ventilation system isolation on a Containment Isolation - Phase B (CIB) signal and subsequent manual initiation of the filtration and pressurization ventilation fan system. Manual initiation of the BVPS fan systems is specifically assumed in all analysis to permit the use of the Unit 1 filtration and pressurization ventilation fan system. The Unit 1 fan system has no automatic actuation features. Therefore, the LOCA safety analysis contains the only assumption requiring an automatic control room ventilation system actuation (i.e., control room isolation (intake and exhaust) on a CIB signal). However, in order to support the manually operated Unit 1 pressurization ventilation fan system, the LOCA analysis does not assume an automatic initiation of the control room filtration and pressurization fan system. The BVPS proposed ITS 3.3.7 includes requirements to assure the manual initiation function is maintained operable in Modes 1 through 4. In addition, the BVPS proposed ITS 3.3.2, "ESFAS," includes the necessary requirements to assure the CIB actuation signal is maintained operable. As such, requirements for the automatic initiation function of the BVPS control room area radiation monitors are not required in the TS to support any current safety analysis assumptions regarding an automatic initiation of control room isolation or pressurization and filtration. However, the radiation monitors are retained in the BVPS ITS 3.3.7 in case they are needed to support fuel movement involving recently irradiated fuel. Although, no specific analysis has been performed to support or permit the movement of recently irradiated fuel at BVPS, requirements to support fuel movement involving recently irradiated fuel are retained in

the proposed BVPS specific ITS consistent with the guidance of the ISTS.

7. The ISTS Table 3.3.7-1 specifies two types of radiation monitors (Control Room Atmosphere and Control Room Air Intake). The BVPS design only includes a single type of radiation monitor (Control Room Area). Each BVPS Unit has two control room area monitors. ISTS Table 3.3.7-1 is revised to conform to the BVPS design. The ISTS requirements for Air Intake monitors are deleted. In addition, the ISTS Control Room Atmosphere monitors are renamed Control Room Area monitors to more clearly define the required instrumentation consistent with the BVPS design.

8. ISTS Table 3.3.7-1 specifies the instrument Functions required operable for the CREVS. The ISTS specifies Safety Injection (SI) as a required CREVS initiation signal. The BVPS design does not use SI to place the control room ventilation in the emergency pressurization mode of operation. The BVPS units use the Containment Isolation - Phase B (CIB) signal to place the control room ventilation in the emergency pressurization mode of operation. The proposed BVPS specific Table 3.3.7-1 is revised to conform to the BVPS design (i.e., SI is replaced with CIB). The requirements for the CIB Function are specified in ITS 3.3.2, "ESFAS Instrumentation," specifically, in Table 3.3.2-1 Function 3.b.

9. ISTS Table 3.3.7-1 specifies the Modes of operation where the instrument Functions are required operable. The ISTS Table Note (a) specifies "During movement of [recently] irradiated fuel assemblies." The corresponding BVPS CTS Applicability includes the additional requirement of "During movement of fuel assemblies over recently irradiated fuel assemblies." The ISTS applicability is revised to match the corresponding CTS Applicability. The proposed ITS Applicability is "During movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies." *The CTS applicability is a more comprehensive requirement than the* corresponding ISTS Applicability that provides additional assurance the systems and components necessary to mitigate a fuel handling accident are available when the potential for a fuel handling accident involving recently irradiated fuel exists.

10. ISTS 3.3.7 contains the requirements for the CREVS Actuation instrumentation. ISTS 3.7.10 contains the requirements for the CREVS mechanical components (i.e., fans, filters, and isolation dampers). ISTS 3.3.7 Required Action B.1.2 states "Enter applicable Conditions and Required Actions for one CREVS train made inoperable by inoperable CREVS actuation instrumentation. The ISTS bases for this Action clarifies the applicable required actions to be entered are the Actions of LCO 3.7.10 for the affected CREVS components. The corresponding BVPS proposed ITS 3.3.7 required action B.2 is revised to clarify that the Action is referring the user to LCO 3.7.10, not 3.3.7, consistent with the bases explanation of the Action. The addition of this information to the Action eliminates the need for the user to refer to the bases for the clarification of what CREVS Actions are to be entered. The addition of this clarification is consistent with the presentation of this type of requirement in other ISTS Actions (e.g., ISTS 3.7.8 Action Condition A notes). The proposed change does not introduce a technical change to the ISTS and will help to clarify the intent of the Action.

3.3.8 Fuel Building Air Cleanup System (FBACS) Actuation Instrumentation

JUSTIFICATION FOR DEVIATION (JFD)

1. ISTS LCO 3.3.8 Fuel Building Air Cleanup System (FBACS) Actuation Instrumentation specifies the LCO, Actions, and Surveillance Requirements for instrumentation used to automatically initiate ventilation systems that ensure radioactive releases from analyzed events (fuel handling accidents or fission products released after a LOCA) are filtered and adsorbed prior to exhausting to the environment. The current BVPS safety analyses associated with the radioactive releases from a LOCA or from a fuel handling accident do not assume the automatic initiation of any systems or components to mitigate the release. As such, the BVPS CTS (and proposed ITS) do not include any requirements for actuation instrumentation similar to the ISTS FBACS Actuation Instrumentation. The CTS (3.9.12) and BVPS proposed ITS (3.7.12) do include requirements for a ventilation system with filtration capability (Supplemental Leak Collection and Release System) to be in operation during fuel movement involving "recently" irradiated fuel. As the CTS and corresponding ITS require this system to be in operation providing the required filtration during fuel movement involving "recently" irradiated fuel, no automatic system actuation is necessary or required in the CTS or ITS to address a fuel handling accident involving recently irradiated fuel. The elimination of this ISTS LCO for automatic actuation instrumentation is acceptable because automatic initiation of filtered ventilation is not required to mitigate the radioactive releases due to a LOCA or from fuel handling accidents resulting from the movement of irradiated fuel or involving "recently" irradiated fuel.

ITS 3.3.8 Boron Dilution Detection Instrumentation

JUSTIFICATION FOR DEVIATION (JFD)

1. ISTS 3.3.9, "Boron Dilution Protection System" (BDPS), is not applicable to the BVPS design or licensing bases. The BDPS as described in the ISTS is a two train system that provides automatic protection against boron dilution accidents by switching the charging pump suction to the RWST upon a specified high flux signal. Such a system is not part of the BVPS plant design. The BVPS units rely on the isolation of unborated water source valves to prevent boron dilution events in Modes 4, 5, and 6 and detection of the event in Mode 3 in time for operator action to mitigate the event. (UFSAR Chapter 14 (Unit 1) and UFSAR Chapter 15 (Unit 2)). The requirements to maintain the unborated water source valves isolated in Modes 4, 5, and 6 is retained in the proposed BVPS ITS in Section 3.1 (ITS, "3.1.8, "Unborated Water Source Isolation Valves"). In addition, there are separate TS requirements for source range indication in Section 3.9, "Refueling" applicable in Mode 6.

   However, the current BVPS TS (CTS 3.3.1.1, Reactor Trip System Instrumentation) does require a single channel of source range instrumentation operable when the rods are fully inserted and not capable of being withdrawn (in Modes 3, 4, and 5). This requirement provides the only TS required means to monitor core reactivity under the specified plant condition. The requirement includes Mode 3 where the monitoring function serves as the only "required" means to detect a boron dilution event in progress when rods are fully inserted and not capable of being withdrawn. As the CTS requirement for a single operable source range monitoring channel was not used for reactor trip purposes, it was not retained in the proposed BVPS ITS 3.3.1, "Reactor Trip System" LCO. Although the BVPS source range channel does not actuate a system designed to mitigate a boron dilution event, it does provide the only TS required means of directly indicating neutron flux in the specified Modes (especially in Mode 3 where the monitoring function may be relied on to detect a boron dilution event in progress). As such, BVPS is proposing to retain in the ITS the CTS requirement for a single operable source range indication channel when the rods are fully inserted and not capable of being withdrawn (in Modes 3, 4, and 5). As the ISTS does not provide a specific LCO for this source range indication requirement, and it no longer belongs in the RTS Specification, BVPS is proposing to modify the functionally similar ISTS 3.3.9, "Boron Dilution Protection System" specification and bases to accommodate the BVPS specific requirement for this source range indication.

2. ISTS LCO 3.3.8 is not applicable to BVPS and is not used. As such, ISTS LCO 3.3.9 is renumbered to ITS LCO 3.3.8 to reflect the deletion of the ISTS LCO 3.3.8. The renumbering includes the SRs.

3. ISTS SR 3.3.9.2 requires a CHANNEL OPERATIONAL TEST (COT). COTs are only necessary to verify the required alarm or trip functions of an instrumentation channel are operable. The proposed BVPS Source Range channel requirement is for indication only. This is based on the CTS requirements for this instrumentation in CTS 3.3.1.1, "RTS Instrumentation. Therefore, proposed ITS 3.3.8 only requires the indication function

provided by the Source Range channel to be operable. TS required indication instrumentation is verified operable by Channel Checks and Channel Calibrations. Proposed BVPS ITS 3.3.8 continues to require Channel Check and Channel Calibration surveillances to assure the indicating channel operability. Therefore, ISTS SR 3.3.9.2 is not required to confirm the operability of an instrument channel required for indication only and is deleted. The next SR is renumbered to ITS SR 3.3.8.2.

4. As described in JFD #1 above. ISTS 3.3.9 pertains to the BDPS, which is not part of the BVPS design. The ISTS 3.3.9 LCO, Applicability and Action requirements are revised to incorporate the BVPS CTS requirements applicable to the single source range indication channel being addressed by the BVPS specific version of this Specification. The proposed LCO, Applicability, and Actions are consistent with the CTS 3.3.1.1, RTS, requirements for this source range indication channel. As the source range indication only requirements are not part of the RTS, they are being incorporated into the functionally similar ISTS 3.3.9 to replace the ISTS BDPS requirements.

ENCLOSURE 2

CHANGES TO THE ISTS BASES

MARKUP TO SHOW BVPS PLANT SPECIFIC DIFFERENCES &

JUSTIFICATION FOR DEVIATION (JFD)

FROM THE STANDARD BASES

Introduction

This enclosure contains the markup of the Improved Standard Technical Specifications (ISTS) Bases to show the changes necessary to make the ISTS Bases document specific to BVPS Units 1 and 2. Changes to the ISTS Bases are identified with a number. The number is associated with a JFD that describes the reason for the change. The markups of the ISTS Bases are followed by a document containing the numbered JFDs for the changes made to the ISTS Bases. Not every change to the ISTS Bases is identified and explained by a JFD. Changes that simply insert current Technical Specification (CTS) information into bracketed (optional) ISTS text are not typically identified with a separate JFD. Bracketed ISTS text identifies specific text that is to be replaced with the corresponding CTS information. Therefore, such changes to the ISTS Bases are self-explanatory and represent the simple transference of CTS requirements to the ISTS. Other changes to the ISTS (i.e., less obvious changes) are described by a JFD.

As the BVPS Unit 1 & 2 Technical Specifications (TS) are being combined into a single set of TS, one markup of each ISTS Bases is provided for both Unit 1 and 2. Unit differences are identified in each ISTS Bases.

In addition, the Bases in this enclosure are marked (where applicable) to show the changes to the standard text resulting from the Industry/NRC TS Task Force (TSTF) process. The TSTF revisions to the standard are marked-up and identified with the applicable TSTF number (i.e., TSTF-03, TSTF-19, etc.). Each TSTF change has its own justification associated with it as part of the Industry/NRC process. The TSTF justifications are not repeated in the BVPS ISTS conversion documentation.

Rev. 1 to 2/28/05 submittal

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 are identified by unit specific documents (Ref. 1) addressing 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~~.~~

as well as other Regulatory Guide 1.97 variables that provide important information for post accident monitoring. Certain Regulatory Guide 1.97 Type A and Category 1 variables, as determined by the Unit specific Regulatory Guide 1.97 analyses (Ref. 1), are not included in LCO 3.3.3 because other instrumentation required by this LCO provide the necessary information to the control room operators.

1

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. ~~Because the list of Type A variables differs widely between units, Table 3.3.3-1 in the accompanying LCO contains no examples of Type A variables, except for those that may also be Category I variables.~~

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

Rev. 1 to 2/28/05 submittal

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 unit specific 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.

1

- REVIEWER'S NOTE -

Table 3.3.3-1 provides a list of variables typical of those identified by the unit specific Regulatory Guide 1.97 analyses. Table 3.3.3-1 in unit specific Technical Specifications (TS) shall list all Type A and Category I variables identified by the unit specific Regulatory Guide 1.97 analyses, as amended by the NRC's Safety Evaluation Report (SER).

The specific instrument Functions listed in Table 3.3.3-1 are discussed in the LCO section.

APPLICABLE SAFETY ANALYSES

1

The PAM instrumentation ensures ~~the~~ the operability of the required 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

Rev. 1 to 2/28/05 submittal

BASES

APPLICABLE SAFETY ANALYSES (continued)

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 10 CFR 50.36(c)(2)(ii). 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.

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~~.~~

and other Regulatory Guide 1.97 instruments that provide important information for post accident monitoring.

1

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 1.

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~~.~~

Therefore, where plant design permits, the two channels required OPERABLE by the LCO should be supplied from different trains of electrical power.

Furthermore, OPERABILITY of two channels allows a CHANNEL CHECK during the post accident phase to confirm the validity of displayed information. ~~More than two channels may be required at some units if the unit specific Regulatory Guide 1.97 analyses (Ref. 1) determined that failure of one accident monitoring channel results in information ambiguity (that is, the redundant displays disagree) that could lead operators to defeat or fail to accomplish a required safety function.~~

INSERT 1

Another

~~The~~ 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

the Penetration Flow Path

required

(required to be isolated during accident conditions)

1

Active CIVs are those valves associated with an unisolated penetration and designed with control room indication per the Table 3.3.3-1 footnotes modifying the required channels of CIV position indication. The active CIVs addressed by this LCO only include valves designed to close on a Phase A or Phase B containment isolation signal. Valves that open on a Phase A or Phase B containment isolation signal are not required to have their position verified to confirm adequate containment isolation.

58

Rev. 1 to 2/28/05 submittal

BASES

LCO (continued)

or the reliability of CIVs without control room indication (i.e., automatic check valves and relief valves that are not dependent on an external power source or closure signal) or

closed

or open under administrative controls in accordance with the provisions of the CIV technical specification,

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.

1

Table ~~3.3.3-1 provides~~ a list of variables typical of those ~~identified by the~~ unit specific Regulatory Guide ~~1.97 (Ref. 1) analyses. Table 3.3.3-1 in unit specific TS should list all Type A and Category I variables identified~~ by the unit specific ~~Regulatory Guide~~ 1.97 analyses, a generally y the NRC's ~~SER.~~

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.

2

The following

~~Listed below~~ are discussions of the specified instrument Functions listed in Table 3.3.3-1. ~~These discussions are intended as examples of what should be provided for each Function when the unit specific list is prepared.~~

1, 2, 3. ~~1, 2.~~ ~~Power Range and Source~~ Range Neutron Flux

Power, Intermediate, and Source

~~Power Range and Source~~ Range Neutron Flux indication is provided to verify reactor shutdown. The two ranges are necessary to cover the full range of flux that may occur post accident.

three

Neutron flux is used for accident diagnosis, verification of subcriticality, and diagnosis of positive reactivity insertion.

Neutron flux is classified as a Category 1 variable.

4, 5. ~~3, 4.~~ Reactor Coolant System (RCS) Hot and Cold Leg Temperatures

(Wide Range)

RCS Hot and Cold Leg Temperatures are Category I variables provided for verification of core cooling and long term surveillance.

Type A and

RCS hot and cold leg temperatures are used to determine RCS subcooling margin. 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.

Rev. 1 to 2/28/05 submittal

BASES

LCO (continued)

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.

~~Reactor outlet temperature inputs to the Reactor Protection System are provided by two fast response resistance elements and associated transmitters in each loop. The channels provide indication over a range of 32 °F to 700 °F.~~

6

2

5. Reactor Coolant System Pressure (Wide Range)

Type A and

RCS wide range pressure is a Category I variable provided for verification of core cooling and RCS integrity long term surveillance.

can be

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).

may also be

The LCO requirement for two OPERABLE indication channels can be met by using any combination of the RCS Pressure (Wide Range) indication channels or the RCS Pressure indication channels associated with the Reactor Vessel Water Level Indicating System which also provide a qualified wide range RCS pressure indication.

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:

LCO (continued)

- 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.

2

A final use of RCS pressure is to determine whether to operate the pressurizer heaters.

~~In some units,~~ 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 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.

7 ~~6.~~ Reactor Vessel Water Level

Reactor vessel water level is classified as a Category 1 variable for Unit 1 and Category 2 variable for Unit 2.

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 ~~7.~~ Containment Sump Water Level (Wide Range)

Containment Sump Water Level is provided for verification and long term surveillance of RCS integrity.

Containment Sump Water Level is used to determine:

- containment sump level accident diagnosis,
- when to begin the recirculation procedure (to confirm automatic initiation or if manual operation is necessary), and

BASES

2

LCO (continued)

The significant post accident use of containment pressure indication is to indicate the potential loss of a fission product boundary for the Emergency Action Levels in the E-Plan. Containment pressure is a key indicator in the declaration of a General Emergency level and the potential need for offsite radiological protection actions. The wide range containment pressure instrumentation provides an adequate range and sensitivity for this purpose.

9

- whether to terminate SI, if still in progress.

8. Containment Pressure (Wide Range)

Containment Pressure (Wide Range) is classified as a Category 1 variable.

Containment Pressure (Wide Range) is provided for verification of RCS and containment OPERABILITY (i.e., integrity).

cooling

16

~~Containment pressure is used to verify closure of main steam isolation valves (MSIVs), and containment spray Phase B isolation when High-3 containment pressure is reached.~~

9. Containment Isolation Valve Position

Penetration Flow Path

(CIV)

~~CIV Position is provided for verification of Containment OPERABILITY, and Phase A and Phase B isolation.~~

~~When used to verify Phase A and Phase B 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 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. Each penetration is treated separately and each penetration flow path is considered a separate function. Therefore, separate Condition entry is allowed for each inoperable penetration flow path.~~

INSERT 2

2

10

10. Containment Area Radiation (High Range)

Containment Area Radiation (High Range) is classified as a Type A and Category 1 variable.

Containment Area Radiation is provided to monitor for the potential of significant radiation releases and to provide release assessment

Rev. 1 to 2/28/05 submittal

BASES

identify a loss of one or more fission product barriers.

LCO (continued)

TSTF-447
(NUREG-1431, Rev. 3)

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.~~

11. 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.

2

11

~~12~~. Pressurizer Level

Pressurizer Level is classified as a Type A and Category 1 variable.

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.

12

~~13~~. 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.

INSERT 3

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.

2

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,

INSERT 4
SG Pressure

Rev. 1 to 2/28/05 submittal

BASES

LCO (continued)

2

- determine the nature of the accident in progress (e.g., verify an SGTR), and
- verify unit conditions for termination of SI during secondary unit HELBs outside containment.

At some units, operator action is based on the control room indication of SG level. The RCS response during a design basis small break LOCA depends on the break size. For a certain range of breaks sizes, the boiler condenser mode of heat transfer is necessary to remove decay heat. Extended startup range level is a Type A variable because the operator must manually raise and control SG level to establish boiler condenser heat transfer. Operator action is initiated on a loss of subcooled margin. Feedwater flow is increased until the indicated extended startup range level reaches the boiler condenser setpoint.

14

The CST is more commonly referred to as the Primary Plant Demineralized Water Storage Tank (DWST). This tank level is classified as a Category 1 variable for Unit 1 and a Type A and Category 1 variable for Unit 2.

~~1~~4. Condensate Storage Tank (CST) Level

CST Level is provided to ensure water supply for auxiliary feedwater (AFW). The CST provides the ensured safety grade water supply for the AFW System. ~~The CST consists of two identical tanks connected by a common outlet header. Inventory is monitored by a 0 inch to 144 inch level indication for each 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 CST Level indication is used for the diagnosis of the need to refill the tank to provide a long term steam generator heat sink for decay heat removal.

(for unit 2)

~~At some units,~~ CST Level is considered a Type A variable because the control room meter and annunciator are considered the primary indication used by the operator.

2

~~The DBAs that require AFW are the loss of electric power, 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 the hotwell~~.

alternate AFW pump suction supply.

INSERT 5
RWST Level

INSERT CIV Position Indication
discussion (from Bases Page 7)

2

BASES

17 a), b), c), d)

LCO (continued)

15, ~~16, 17~~, 18. Core Exit Temperature

Core Exit Temperature is provided for verification and long term surveillance of core cooling.

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 with two CETs per required channel. The CET pair are oriented radially to permit evaluation of core radial decay power distribution. Core Exit Temperature is used to determine whether to terminate SI, if still in progress, or to reinitiate SI if it has been stopped. Core Exit Temperature is also used for unit stabilization and cooldown control.

INSERT 6

2

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. Power distribution symmetry was considered in determining the specific number and locations provided for diagnosis of local core problems. Therefore, two randomly selected thermocouples are not sufficient to meet the two thermocouples per channel requirement in any quadrant. The two thermocouples in each channel must meet the additional requirement that one is located near the center of the core and the other near the core perimeter, such that the pair of Core Exit Temperatures indicate the radial temperature gradient across their core quadrant. Unit specific evaluations in response to Item II.F.2 of NUREG-0737 (Ref. 3) should have identified the thermocouple pairings that satisfy these requirements. Two sets of two thermocouples ensure a single failure will not disable the ability to determine the radial temperature gradient.

INSERT 7
Function 18

19. ~~Auxiliary Feedwater~~ Flow

AFW Flow is provided to monit~~or operation~~ of decay heat removal via the SGs.

BASES

LCO (continued)

2

INSERT 8
Function 19

The AFW Flow to each SG is determined from a differential pressure measurement calibrated for a range of 0 gpm to 1200 gpm. Redundant monitoring capability is provided by two independent trains of instrumentation for each SG. 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,
- 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.

At some units, 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.

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

TSTF-359

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.

Rev. 1 to 2/28/05 submittal

BASES

ACTIONS (continued)

TSTF-359 A

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 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.

within the following 14 days.

3

B.1 5 TSTF-369 the immediate 3

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 5.6.7, 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.

C.1 evaluation into the 6

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

ACTIONS (continued)

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.~~

TSTF-447
(NUREG-1431, Rev. 3)

~~D.1~~

- REVIEWER'S NOTE -

Implementation of WCAP-14986, Rev 1, "Post Accident Sampling System Requirements: A Technical Basis," and the associated NRC Safety Evaluation dated June 14, 2000, allows other core damage assessment capabilities in lieu of the Post Accident Sampling System.

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 or other core damage assessment capabilities available and] to provide information for operator decisions. Also, it is unlikely that a LOCA (which would cause core damage) would occur during this time.

TSTF-447
(NUREG-1431, Rev. 3)

D.1 D ~~is~~ the D

~~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.

E E ~~is~~

~~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.

BASES

TSTF-447
(NUREG-1431, Rev. 3)

ACTIONS (continued)

F

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

5 TSTF-369

~~At this unit,~~ alternate means of monitoring Reactor Vessel Water Level and Containment Area Radiation have been developed and tested. These alternate means may be 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 Specification 5.6.~~7~~, 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.

2

INSERT 9

SURVEILLANCE REQUIREMENTS

4

5

A Note has been added to the SR Table to clarify that SR 3.3.3.1 and SR 3.3.3.2 apply to each PAM instrumentation Function in Table 3.3.3-1

except as noted in SR 3.3.3.2.

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.~~

In addition, it is not necessary to place a system or component in service that is not normally in service (e.g., initiate AFW flow to the SGs) in order to perform the required CHANNEL CHECK. In cases where the required instrumentation may be energized but only a single channel is available (e.g., HHSI Flow) or where there may be no flow (e.g., AFW Flow), the CHANNEL CHECK may be accomplished by comparing the indicated value to the known plant condition (e.g., zero flow). In the case of CIVs, the CHANNEL CHECK may be accomplished by comparing the indicated valve position to the known or expected valve position based on current plant conditions.

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 applicable.

4

BASES

SURVEILLANCE REQUIREMENTS (continued)

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.

5

In addition, this SR is modified by Note 2 that states the CHANNEL CALIBRATION surveillance is not applicable to the Penetration Flow Path Containment Isolation Valve Position Indication Function. The required valve position indication channels are verified by a Trip Actuating Operational Test (TADOT) in lieu of a CHANNEL CALIBRATION.

SR 3.3.3.2

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." 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.

one

5

INSERT 10

REFERENCES

1

[1. ~~Unit specific document (e.g., FSAR, NRC Regulatory Guide 1.97 SER letter).~~]

2. Regulatory Guide 1.97, [~~date~~].

Rev. 2, December, 1980

3. NUREG-0737, Supplement 1, "TMI Action Items."

Unit 1 Regulatory Guide 1.97 Submittals: (1) Duquesne Light Letter dated 10/13/86, Subject: Regulatory Guide 1.97, Revision 2, Supplemental Report (Complete RG 1.97 report attached), (2) Duquesne Light Letter dated 4/22/87, Subject: RG 1.97, Revision 2, Response to Interim Review Results, (Item 10, Type A classification of the Primary Plant Demineralized Water Storage Tank Level removed), (3) Duquesne Light Letter dated 12/18/89, Subject: Response to NRC RG 1.97 Concerns, (Page 4, A1 classification of AFW Flow removed).

Unit 1 NRC Regulatory Guide 1.97 Safety Evaluation Reports (SERs): (1) NRC Letter dated 11/20/89, Subject: Completion of Review of Regulatory Guide 1.97 Conformance (TAC No. 51071), (2) NRC Letter dated 12/30/91, Subject: Emergency Response Capability - Conformance to Regulatory Guide 1.97 (TAC No. M75944), (3) NRC Letter dated 6/15/92, Subject: Emergency Response Capability - Conformance To Regulatory Guide 1.97 (TAC No. M75944), (4) NRC Letter dated 11/17/95, Subject: Conformance to Regulatory Guide 1.97, Revision 2, Post-Accident Neutron Flux Monitoring Instrumentation for BVPS Unit 1 (TAC No. M81201).

Unit 2 Regulatory Guide 1.97 Submittal: UFSAR Table 7.5-1

Unit 2 NRC Regulatory Guide 1.97 SER: NUREG-1057, Supplement No. 1, Section 7.5, May 1986 (original Unit 2 SER).

ITS 3.3.3 BASES INSERTS

INSERT 1 - BVPS BASES BACKGROUND

For some PAM Functions, Table 3.3.3-1 specifies one or three required channels. The following are exceptions to the two-channel requirement:

Three channels of steam generator (SG) wide range level instrumentation are required to be OPERABLE. Each SG has one installed wide range channel that assures the ability to monitor SG level during operating conditions when the level may not be in the normal range. In many accident analyses, two SGs are assumed to be available to provide the necessary heat removal capacity. The requirement for three OPERABLE channels of wide range level indication (one per SG) helps to assure adequate wide range SG level indication remains available (assuming one indication channel fails or a SG is faulted) to monitor SG level and support maintaining the necessary heat removal capacity.

Only one channel of high head safety injection (HHSI) total automatic injection header flow is required to be OPERABLE. The normal SI injection flow path (automatically initiated on an SI signal) has a single installed Regulatory Guide 1.97 flow instrument that indicates total SI flow in the control room. This indicator is used to confirm automatic SI flow initiation. The single HHSI total flow indication is adequate considering the alternate control room indications available to confirm the operation of the SI system. An alternate method of verifying SI initiation can be provided by the High Head SI pump amperage indication, the High Head SI header pressure indication, and the SI automatic valve position indication.

INSERT 2 - BVPS BASES FOR CIV POSITION INDICATION

Penetration Flow Path CIV Position indication is classified as a Category 1 variable for Unit 1 and a Category 2 variable for Unit 2. This indication is provided for verification of Containment Phase A and Phase B isolation. The E-Plan identifies that an elevated emergency action level should be declared following an accident in the event of a failure of automatic containment isolation.

This requirement only applies to containment isolation valves which receive a Phase A and Phase B containment isolation closure signal. This requirement is not applicable to valves that open on receipt of a Containment Phase A or B signal. When used to verify Phase A and Phase B 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 penetration flow path, i.e., two total channels of CIV position indication for a penetration flow path with two active valves that have control room position indication. For containment penetrations with only one active CIV having control room indication, footnote (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 with control room indication and the reliability of containment isolation valves without control room indication (i.e. automatic check valves and relief valves that are not dependent on a external power source or closure signal), or prior knowledge of a passive valve, or via closed system boundary status. If a normally active CIV is known to be closed and deactivated or open under administrative controls in accordance with the provisions of the CIV technical specification, position indication is not needed to determine status. Therefore, the position indication for valves in this state is not required to be OPERABLE. Footnote (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. Each penetration is treated separately and each penetration flow path is considered a separate function. Therefore, separate Condition entry is allowed for each inoperable penetration flow path.

INSERT 3 – BVPS SG WATER LEVEL BASES

SG Water Level (Wide Range) is classified as a Category 1 variable for Unit 1 and as a Type A and Category 1 variable for Unit 2.

SG Water Level (Wide Range) indication is provided to monitor operation of decay heat removal via the SGs. SG Water Level (Wide Range) indication is used to:

- identify the faulted SG following a steam generator 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 a steam generator tube rupture),
- verify unit conditions for the termination of SI during secondary side HELBs outside containment, and
- verify SG tubes are covered before terminating AFW to the faulted SG to assure iodine scrubbing and design basis iodine partitioning in the event of a steam generator tube rupture.

Controlling SG level to maintain a heat sink and the diagnosis of a steam generator tube rupture based on SG level are operator actions assumed in the design basis accident analysis for which no automatic actuation is provided. In addition, the PRA shows that SG Wide Range Level indication can be important to safety by providing information for the initiation of operator actions to establish bleed and feed for a loss of heat sink event.

INSERT 4 – BVPS SG PRESSURE BASES

13 a), b), c). Steam Generator (SG) Pressure

SG Pressure is classified as a Type A and Category 1 variable.

SG Pressure provides a target indication for RCS depressurization for the steam generator tube rupture accident to terminate the RCS inventory loss. In the event of a steam generator tube rupture accident, the EOPs instruct the operators to depressurize the RCS to a pressure below the secondary side pressure in the ruptured steam generator. RCS depressurization to a pressure less than the steam generator pressure terminates the RCS inventory loss and terminates the steam generator inventory gain, preventing overfill of the steam generator. The termination of the break flow is an operator action assumed in the design basis steam generator tube rupture analysis for which no automatic action is provided.

ITS 3.3.3 BASES INSERTS

INSERT 5 - BVPS RWST BASES

15. Refueling Water Storage Tank (RWST) Level (Wide Range)

The RWST Level is classified as a Type A and Category 1 variable for Unit 1 and a Category 2 variable for Unit 2.

RWST Level provides an indication of the water inventory remaining for use by containment spray and safety injection for core cooling and containment cooling. No operator actions in the design basis accident analysis are based on the RWST Level indication. The switchover from the RWST to the containment sump is performed automatically.

In the event of an accident in which the RCS inventory losses are outside of containment (e.g., steam generator tube rupture or interfacing system LOCA), the remaining RWST level is an important indication for choosing the appropriate operator actions to maintain core cooling in the EOPs. The RWST Level is important in diagnosing the need for implementing RWST refill to maintain a sufficient inventory for long term core cooling following these events.

INSERT 6 - BVPS CORE EXIT TEMPERATURE BASES

Core Exit Temperature is classified as a Category 1 variable for Unit 1 and a Type A and Category 1 variable for Unit 2.

Core Exit Temperature indication is provided for verification and long term surveillance of core cooling. The Core Exit Temperature indication provides information for the operators to initiate RCS depressurization following a steam generator tube rupture. Core Exit Thermocouple indication is important to safety because it provides information necessary to maintain subcooling for RCS cooldown and depressurization following steam generator tube rupture and other small break LOCA events. It is also used as an indication for the transfer from the EOPs to the Severe Accident Management Guidance, where a greater focus is maintained on preserving the remaining fission product barriers.

Table 3.3.3-1 requires two OPERABLE channels of Core Exit Temperature per core quadrant. Footnote (c) to Table 3.3.3-1 requires a Core Exit Temperature channel to consist of two core exit thermocouples. Two sets of two thermocouples ensure that a single failure will not affect the ability to determine whether an inadequate core cooling condition exists.

INSERT 7 BVPS SECONDARY HEAT SINK INDICATION BASES

18. Secondary Heat Sink Indication is comprised of two different types of indications (instruments). Footnote (d) to this Function explains that the two required channels per SG can be satisfied by using any combination of SG Water Level (Narrow Range) channels and Auxiliary Feedwater (AFW) Flow Channels such that two channels are OPERABLE for each SG.

SG Water Level (Narrow Range) is classified as a Type A and Category 1 variable. AFW Flow is classified as a Category 2 variable for Unit 1 and a Type A and Category 1 variable for Unit 2.

This indication provides confirmation of adequate SG inventory to ensure the required heat sink(s) are available. The availability of SG(s) for heat removal is important to safety to ensure adequate core cooling. This indication can also be used by the operator to confirm that the AFW System is in operation and delivering sufficient flow to each SG. AFW system initiation is important to safety because it provides information necessary for operator action to initiate alternate feedwater sources in the event of a failure of the AFW system.

INSERT 8 BVPS HIGH HEAD SI AUTOMATIC INJECTION HEADER FLOW BASES

19. High Head Safety Injection (SI) Flow

High Head Safety Injection (SI) Flow is classified as a Category 2 variable.

High Head SI Flow indication is used to confirm automatic safety injection initiation following a design basis accident. Therefore, the required flow indicator for this PAM Function is the total flow indicator installed in the automatic High Head SI flow path. Failure to manually initiate SI flow when the automatic initiation fails can lead to a significant increase in core damage frequency. Operator action is based on the ECCS flow indication in the control room. Only high head safety injection is important for all accident sequences except the unlikely double-ended guillotine rupture of the largest reactor coolant pipe. Therefore, only the High Head SI Flow indication is required.

This instrumentation was not designed to meet Regulatory Guide 1.97 Category 1 or Type A requirements. Only a single channel is available and required OPERABLE for each unit. The requirement for a single OPERABLE channel of this indication is acceptable due to design requirements for this instrument (i.e., not Category 1) and the additional information available in the control room to confirm high head SI initiation. For example, if the total High Head SI Flow indication is not available, alternate methods of verifying SI initiation can be provided by the High Head SI pump amperage indication, the High Head SI header pressure indication, and the SI automatic valve position indication.

INSERT 9 BVPS ACTION CONDITION F BASES

The following are examples of acceptable alternate indication methods for Reactor Vessel Water Level and Containment Area Radiation:

Reactor Vessel Water provides information to indicate whether the core cooling safety function is being accomplished. As such, the core exit temperature and subcooling (RCS Pressure and Temperature) indications may be used in lieu of Reactor Vessel Water indication.

Radiation monitor RM-1RM-201 (Unit 1) and 2RMR-RQ202B (Unit 2) or a portable radiation monitor (with appropriate multiplier if necessary) can be used as an alternate method of indication for Containment Area Radiation High Range.

INSERT 10 BVPS BASES SR 3.3.3.3

SR 3.3.3.3

This surveillance requires the performance of a TADOT. The TADOT is only required for the Penetration Flow Path Containment Isolation Valve Position Function on Table 3.3.3-1. This SR is required to be performed at least once every 18 months, or approximately at every refueling. The TADOT is adequate to verify the OPERABILITY of the required containment isolation valve position indication channels.

A Note modifies the surveillance requirements to specify that SR 3.3.3.3 is only applicable to the Penetration Flow Path Containment Isolation Valve Position Function. Due to the design of the instrument circuits involved, the TADOT, rather than the CHANNEL CALIBRATION, provides the more appropriate defined test to verify the OPERABILITY of these indication channels.

The Frequency of 18-months is consistent with the typical industry refueling cycle.

B 3.3 INSTRUMENTATION

B 3.3.4 Remote Shutdown System

BASES

3 indications 1

BACKGROUND 2

The Remote Shutdown System provides the control room operator with sufficient ~~instrumentation~~ and controls to ~~place and~~ maintain the unit in a safe shutdown condition from a location other than the control room. This capability is necessary to protect against the possibility that the control room becomes inaccessible. A safe shutdown condition is defined as MODE 3. With the unit in MODE 3, ~~the~~ Auxiliary Feedwater (AFW) System and the steam generator (SG) ~~safety valves or the SG~~ atmospheric dump valves (ADVs) can be used to remove core decay heat and meet all safety requirements. The long term supply of water for the AFW System and the ability to borate the Reactor Coolant System (RCS) from outside the control room allows extended operation in MODE 3.

control utilizing the Remote Shutdown System. The Remote Shutdown System indications and controls necessary to maintain the unit in a safe shutdown condition (Mode 3) are specified in Table B 3.3.4-1 and are physically located on the Emergency Shutdown Panels (PNL-SHUTDN for Unit 1 and PNL-2SHUTDN for Unit 2).

3

If the control room becomes inaccessible, the operators can establish ~~control at the~~ remote shutdown panel, and place and ~~maintain the unit in~~ MODE 3. Not all ~~controls and necessary transfer switches~~ are located at the remote shutdown panel. ~~Some controls and transfer switches will have to be operated locally at the switchgear, motor control panels, or other local stations.~~ The unit automatically reaches MODE 3 following a unit ~~shutdown~~ and can be maintained safely in MODE 3 for an extended period of time.

trip

Plant procedures assure the reactor is manually tripped and safely shutdown prior to transferring control to the Emergency Shutdown Panel.

3

The OPERABILITY of the remote shutdown control and ~~instrumentation~~ functions ensures there is sufficient information available on selected unit parameters to ~~place and~~ maintain the unit in MODE 3 should the control room become inaccessible.

indication

3

1

APPLICABLE SAFETY ANALYSES

The Remote Shutdown System is required to provide equipment at appropriate locations outside the control room with a capability to ~~promptly shut down and~~ maintain the unit in a safe condition in MODE 3.

There are no specific design basis accident safety analysis assumptions (i.e., single active failures) that would require redundant Remote Shutdown System indications or controls be maintained OPERABLE by the Technical Specifications. Therefore, Table B 3.3.4-1 only specifies that a single channel of each indication and control function be operable in order to meet the requirements of the LCO.

The criteria governing the design and specific system requirements of the Remote Shutdown System are located in 10 CFR 50, Appendix A, GDC 19 (Ref. 1).

The Remote Shutdown System satisfies Criterion 4 of 10 CFR 50.36(c)(2)(ii).

7

the Emergency Shutdown Panels (PNL-SHUTDN for Unit 1 and PNL-2SHUTDN for Unit 2)

BASES

3 for indications

LCO

7

Component Cooling Water, Unit 1 River Water, and Unit 2 Service Water.

However, not all indication and control circuits associated with the systems identified in Table B 3.3.4-1 are required OPERABLE in order to support the required Remote Shutdown System Function. Table B 3.3.4-1 only specifies 1 required channel for each indication and control instrument associated with each Remote Shutdown System Function. For example, the capability to remotely operate a single AFW pump and control its flow and the control of one associated SG ADV provide the necessary control channels to accomplish the decay heat removal Function specified in Table B 3.3.4-1. All the AFW pump and flow controls do not have to be OPERABLE to accomplish the decay heat removal Function required OPERABLE by the LCO. Similarly, the control for a single letdown orifice isolation valve is sufficient to meet the requirement of the RCS Inventory Function for 1 channel of letdown flow control.

5

The Remote Shutdown System LCO provides the OPERABILITY requirements of the ~~instrumentation~~ and controls necessary to ~~place and~~ maintain the unit in MODE 3 from ~~a location other than the control room~~. The ~~instrumentation~~ and controls required are listed in Table B 3.3.4-1.

1

Each control channel specified in Table B 3.3.4-1 consists of both the control switch and associated transfer switch if applicable.

The controls, ~~instrumentation~~, and transfer switches are required for:

- Core reactivity control ~~(initial and long term)~~,
- RCS pressure control, 1 2
- Decay heat removal via the AFW System and the ~~SG safety valves or~~ SG ADVs,
- RCS inventory control via charging flow, and
- ~~Safety support systems for the above Functions, including service water, component cooling water, and onsite power, including the diesel generators.~~

3 indication

A Function of a Remote Shutdown System is OPERABLE if all ~~instrument~~ and control channels needed to support the Remote Shutdown System Function are OPERABLE. In some cases, Table B 3.3.4-1 may ~~indicate that~~ the required ~~information or~~ control capability is ~~available from~~ several alternate sources. In these cases, ~~the Function is OPERABLE~~ as long as one channel of ~~any of the alternate information or control sources is OPERABLE.~~

indication 3

The remote shutdown ~~instrument~~ and control ~~circuits~~ covered by this LCO do not need to be energized to be considered OPERABLE. This LCO is intended to ensure the ~~instruments~~ and control ~~circuits~~ will be OPERABLE if unit conditions require that the Remote Shutdown System be placed in operation.

channels

1

APPLICABILITY

The Remote Shutdown System ~~LCO~~ is applicable in MODES 1, 2, and 3. This is required so that the unit can be ~~placed and~~ maintained in MODE 3 for an extended period of time from a location other than the control room.

This LCO is not applicable in MODE 4, 5, or 6. In these MODES, the facility is already subcritical and in a condition of reduced RCS energy. Under these conditions, considerable time is available to restore necessary instrument control functions if control room instruments or controls become unavailable.

BASES

TSTF-359

ACTIONS

A Remote Shutdown System Function is inoperable when 1 or more required channel(s) of indication or control are inoperable. The required channels of indication and control for each Remote Shutdown System Function are specified on Table B 3.3.4-1.

3

TSTF-359 A

Note 1 is included which excludes the MODE change restriction of LCO 3.0.4. This exception allows entry into an applicable MODE while relying on the ACTIONS even though the ACTIONS may eventually require a unit shutdown. This exception is acceptable due to the low probability of an event requiring the Remote Shutdown System and because the equipment can generally be repaired during operation without significant risk of spurious trip.

A Remote Shutdown System division is inoperable when each function is not accomplished by at least one designated Remote Shutdown System channel that satisfies the OPERABILITY criteria for the channel's Function. These criteria are outlined in the LCO section of the Bases.

Note 2 has been added to the ACTIONS to clarify the application of Completion Time rules. Separate Condition entry is allowed for each Function. The Completion Time(s) of the inoperable channel(s)/~~train(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 addresses the situation where one or more required Functions of the Remote Shutdown System are inoperable. This includes the control and transfer switches for any required Function.

The Required Action is to restore the required Function to OPERABLE status within 30 days. The Completion Time is based on operating experience and the low probability of an event that would require evacuation of the control room.

B.1 and B.2

If the Required Action and associated Completion Time of Condition A is not met, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and to 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.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.4.1

indication

3

Performance of the CHANNEL CHECK once every 31 days 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. CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying that the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

indication

3

Agreement criteria are determined by the unit staff, based on a combination of the channel instrument uncertainties, including indication and readability. If the channels are within the criteria, it is an indication that the channels are OPERABLE. 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.

As specified in the Surveillance, a CHANNEL CHECK is only required for those channels which are normally energized.

In addition, it is not necessary to place a system or component in service that is not normally in service (e.g., initiate AFW flow to the SGs) in order to perform the required CHANNEL CHECK of a Remote Shutdown System indication channel. In cases where the required instrumentation may be energized but only a single channel is available or where there may be no flow (e.g., AFW Flow), the CHANNEL CHECK may be accomplished by comparing the indicated value to the known plant condition (e.g., zero flow).

6

The Frequency of 31 days is based upon operating experience which 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.

3

1

SR 3.3.4.~~2~~

SR 3.3.4.~~2~~ verifies each required Remote Shutdown System control circuit and transfer switch performs the intended function. This verification is performed from the remote shutdown panel and locally, as appropriate. Operation of the equipment from the remote shutdown panel is not necessary. The Surveillance can be satisfied by performance of a continuity check. This will ensure that if the control room becomes inaccessible, the unit can be ~~placed and~~ maintained in MODE 3 from the ~~remote shutdown panel and the local control stations~~. 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. (However, this Surveillance is not required to be performed only during a unit outage.)

3

Emergency Shutdown Panels (PNL-SHUTDN for Unit 1 and PNL-2SHUTDN for Unit 2)

36

4

BASES

SURVEILLANCE REQUIREMENTS (continued)

4 → 36

Operating experience demonstrates that remote shutdown control channels usually pass the Surveillance test when performed at the ~~[18]~~ month Frequency.

SR 3.3.4.~~3~~ 2

an indication ← 3

CHANNEL CALIBRATION is a complete check of ~~the~~ instrument loop and the sensor. The test verifies that the channel responds to a measured parameter within the necessary range and accuracy.

Whenever a sensing element is replaced, the next required CHANNEL CALIBRATION of the resistance temperature detectors (RTD) sensors is accomplished by an inplace cross calibration that compares the other sensing elements with the recently installed sensing element.

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."

4

The Frequency of [18] months is based upon operating experience and consistency with the typical industry refueling cycle.

~~[SR 3.3.4.4~~

~~SR 3.3.4.4 is the performance of a TADOT every 18 months. This test should verify the OPERABILITY of the reactor trip breakers (RTBs) open and closed indication on the remote shutdown panel, by actuating the RTBs. A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable TADOT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions. The Frequency is based upon operating experience and consistency with the typical industry refueling outage.]~~

REFERENCES 1. 10 CFR 50, Appendix A, GDC 19.

Replace with BVPS specific Table B 3.3.4-1
(next page)

8

Table B 3.3.4-1 (page 1 of 1)
Remote Shutdown System Instrumentation and Controls

FUNCTION/INSTRUMENT OR CONTROL PARAMETER	REQUIRED NUMBER OF FUNCTIONS
1. Reactivity Control	
a. Source Range Neutron Flux	[1]
b. Reactor Trip Breaker Position	[1 per trip breaker]
c. Manual Reactor Trip	[2]
2. Reactor Coolant System (RCS) Pressure Control	
a. Pressurizer Pressure or RCS Wide Range Pressure	[1]
b. Pressurizer Power Operated Relief Valve (PORV) Control and Block Valve Control	[1, controls must be for PORV & block valves on same line]
3. Decay Heat Removal via Steam Generators (SGs)	
a. RCS Hot Leg Temperature	[1 per loop]
b. RCS Cold Leg Temperature	[1 per loop]
c. AFW Controls Condensate Storage Tank Level	[1]
d. SG Pressure	[1 per SG]
e. SG Level or AFW Flow	[1 per SG]
4. RCS Inventory Control	
a. Pressurizer Level	[1]
b. Charging Pump (Control)	[1]

- REVIEWER'S NOTE -

For channels that fulfill GDC 19 requirements, the number of OPERABLE channels required depends upon the unit licensing basis as described in the NRC unit specific Safety Evaluation Report (SER). Generally, two divisions are required OPERABLE. However, only one channel per a given Function is required if the unit has justified such a design, and NRC's SER accepted the justification.

- REVIEWER'S NOTE -

This Table is for illustration purposes only. It does not attempt to encompass every Function used at every unit, but does contain the types of Functions commonly found.

Insert BVPS Specific Table B 3.3.4-1

Table B 3.3.4-1 (page 1 of 1)
Remote Shutdown System Indications and Controls

Emergency Shutdown Panels
PNL-SHUTDN (Unit 1) and PNL-2SHUTDN (Unit 2)

REMOTE SHUTDOWN SYSTEM FUNCTION INDICATIONS AND CONTROLS	REQUIRED NUMBER OF CHANNELS
1. Reactivity Control Function	
a. Source Range Neutron Flux (indication)	1
b. Boric Acid Transfer Pump (control)	1
2. Reactor Coolant System (RCS) Pressure Control Function	
a. Pressurizer Pressure (indication)	1
or	
RCS Wide Range Pressure (indication) (Unit 2 only)	
b. Pressurizer heater (control)	1
3. Decay Heat Removal via Steam Generators (SGs) Function	
a. RCS Hot Leg Temperature (indication)	1
b. RCS Cold Leg Temperature (indication)	1
c. SG Pressure (indication)	1/SG
d. SG Level (indication)	1/SG
e. AFW Flow (indication)	1/SG
f. SG Atmospheric Dump Valve (control)	1
or	
Residual Heat Release Valve (control) (Unit 2 only)	
g. AFW pump (Control)	1
h. AFW Flow (Control)	1
4. RCS Inventory Control Function	
a. Pressurizer Level (indication)	1
b. Charging Pump (Control)	1
c. Charging Flow (Control)	1
d. Letdown Flow (Control)	1
5. Support Systems	
a. Component Cooling Water pump (control)	1
b. River Water pump (control) (Unit 1 only)	1
c. Service Water pump (control) (Unit 2 only)	1

B 3.3 INSTRUMENTATION

B 3.3.5 Loss of Power (LOP) Diesel Generator (DG) Start Instrumentation and Bus Separation

BASES 2 1

BACKGROUND

The LOP instrumentation ensures a reliable source of emergency power by providing the following Functions: 1) An automatic DG start on emergency bus undervoltage, and 2) Separation of the emergency buses on undervoltage and degraded voltage conditions.

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 in the switchyard. ~~There are two LOP~~ start signals, one for ~~each 4.16 kV vital~~ bus.

INSERT 1

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~~ 8.3 (Ref. 1).

The Allowable Value in conjunction with the nominal trip setpoint and LCO establishes the threshold for ~~Engineered Safety Features Actuation System (ESFAS) action to prevent exceeding acceptable limits such that the consequences of Design Basis Accidents (DBAs) will be acceptable.~~ the LOP instrumentation capability to provide the required loss of voltage and degraded voltage protection that assures a reliable source of emergency power. The nominal trip setpoints are specified in the Licensing Requirements Manual (LRM). The Allowable Value is considered a limiting value such that a channel is OPERABLE if the setpoint is found ~~not~~ to ~~exceed the Allowable Value~~ satisfy the applicable Allowable Value requirements specified in Table 3.3.5-1 during the CHANNEL CALIBRATION. Note that although a channel is OPERABLE under these circumstances, the setpoint must be left adjusted to within the established calibration tolerance band of the setpoint in accordance with uncertainty assumptions stated in the referenced setpoint methodology, (as-left-criteria) and confirmed to be operating within the statistical allowances of the uncertainty terms assigned.

Allowable Values and LOP DG Start Instrumentation Setpoints

1 2

- REVIEWER'S NOTE -

Alternatively, a TS format incorporating an Allowable Value only may be proposed by a licensee. In this case the Nominal Trip Setpoint value is located in the TS Bases or in a licensee controlled document outside the TS. Changes to the trip setpoint value would be controlled by 10 CFR 50.59 or administratively as appropriate, and adjusted per the setpoint methodology and applicable surveillance requirements. At their option, the licensee may include the trip setpoint in the surveillance requirement as shown, or suggested by the licensee's setpoint methodology.

and Bus Separation

nominal

BASES

The allowances used to develop the nominal trip setpoints for the loss of voltage and degraded voltage relays are described in the unit specific setpoint methodology (Ref. 2).

2

BACKGROUND (continued)

~~The Trip Setpoints used in the relays are based on the analytical limits presented in FSAR, Chapter 15 (Ref. 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.

operation of the LOP Instrumentation

Setpoints adjusted consistent with the requirements of 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.

nominal

Table 3.3.5-1

LRM.

Allowable Values ~~and/or Nominal Trip Setpoints~~ are specified for each Function in ~~SR 3.3.5.3~~. Nominal Trip Setpoints are ~~also~~ specified in the ~~unit specific setpoint calculations~~. The trip setpoints are 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~~ (Ref. ~~3~~).

1

methodology

2

APPLICABLE SAFETY ANALYSES

The LOP ~~DG start~~ 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.

1

The required channels of LOP ~~DG start~~ 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.

3

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)

2

and Bus Separation

BASES

where applicable.

APPLICABLE SAFETY ANALYSIS (continued)

2

Instrumentation," include the appropriate DG loading and sequencing delay.

The LOP ~~DG start~~ instrumentation channels satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

the loss of voltage and degraded voltage instrument channels specified in Table 3.3.5-1

satisfies the applicable Allowable Value requirements specified in Table 3.3.5-1

LCO

LOP instrumentation

a reliable source of emergency power is available

The LCO for LOP ~~DG start~~ instrumentation requires that ~~[three] channels per bus of both the loss of voltage and degraded voltage Functions shall~~ be OPERABLE in MODES 1, 2, 3, and 4 when the LOP ~~DG start~~ 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. A channel is OPERABLE ~~with a trip setpoint value outside its calibration tolerance band~~ provided the trip setpoint "as-found" value ~~does not exceed its associated Allowable Value~~ and provided the trip setpoint "as-left" value is adjusted to a value within the "as-left" calibration tolerance band of the Nominal Trip Setpoint. A trip setpoint may be set more conservative than the Nominal Trip Setpoint as necessary in response to plant conditions. 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.

provided that the ± calibration tolerance band remains the same and the Allowable Value is administratively controlled accordingly in the conservative direction to meet the assumptions of the setpoint methodology. The conservative direction is established by the direction of the inequality applied to the Allowable Value.

For example,

for a loss of voltage

APPLICABILITY

CTS ESFAS Bases

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.

condition on an emergency

voltage

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

BASES

ACTIONS (continued)

A.1
Condition A applies to all LOP instrument functions specified in Table 3.3.5-1.
Condition A addresses the situation where one or more channels for one or more Functions are inoperable at the same time. The Required Action is to refer to Table 3.3.5-1 and to take the applicable Required Actions for the LOP functions affected. The Completion Times are those from the referenced Conditions and Required Actions.

specified in Table 3.3.5-1

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 B

The Condition is applicable to a single inoperable channel on one bus or a single inoperable channel on each bus.

Condition ~~A~~ applies to the LOP ~~DG start~~ Functions with one loss of voltage or one degraded voltage channel per bus inoperable.

B

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 are configured to provide a one-out-of-~~three~~ logic to initiate ~~a trip of the incoming offsite power~~.

one

the LOP protection function.

provided the corresponding instrument channels, electrical bus, and DG in the other train are OPERABLE.

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~~.

time necessary to accomplish the action in a safe manner

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.

the other electrical train remains OPERABLE to supply emergency power if required.

~~B~~.1 C

Condition ~~B~~ applies when more than one loss of voltage or more than one degraded voltage channel per bus are inoperable.

Required Action ~~B~~.1 requires restoring ~~all but~~ one channel per bus 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.

Insert D.1

1

~~C~~.1 E

instrument actuation

instrument

A, B, C, or D

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.

In these circumstances the Conditions specified in LCO 3.8.1, "AC Sources - Operating," or LCO 3.8.2, "AC Sources - Shutdown," for the

The Condition is applicable to two inoperable channels on one bus or two inoperable channels on each bus.

BASES

ACTIONS (continued)

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.

SURVEILLANCE REQUIREMENTS

1

~~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 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 3.3.5.1 ~~SR 3.3.5.2~~

3

~~SR 3.3.5.2 is the~~ performance of a TADOT. A successful test of ~~the~~ any required ~~contact(s)~~ of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable TADOT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications ~~and non-Technical Specifications tests at least once per refueling interval with applicable extensions.~~ Surveillance Requirements. This test is performed every ~~[31~~ 92 days~~]~~. The test checks trip devices that provide actuation signals directly, bypassing the analog process control equipment. ~~For these tests, the relay trip setpoints are verified and adjusted as necessary.~~ The Frequency is based on the known reliability

CTS

1

and Bus Separation

The SR is modified by a Note that excludes verification of setpoint from the TADOT. The SR applies to the loss of voltage and degraded voltage relays for the 4160 V and 480 V emergency buses and setpoint verification requires removal of the relay and a bench calibration. Therefore, relay calibration and setpoint verification are accomplished during the 18-month CHANNEL CALIBRATION.

SURVEILLANCE REQUIREMENTS (continued)

of the relays and controls ~~and the multichannel redundancy available,~~ and has been shown to be acceptable through operating experience.

1

SR 3.3.5.2

~~SR 3.3.5.3~~

~~SR 3.3.5.3~~ is the performance of a CHANNEL CALIBRATION.

2

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.~~ specified in the LRM.

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.

1

For Unit 1 only, the time delay specified for the 4160 V emergency bus loss of voltage DG start relay, includes auxiliary relay times.

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.

Insert SR 3.3.5.3

REFERENCES

1. ~~FSAR, Section [8.3].~~ Unit 1 and Unit 2 UFSAR, Chapter 8.
2. ~~FSAR, Chapter [15].~~ UFSAR, Chapter 14 for Unit 1 and Chapter 15 for Unit 2.
3. ~~Plant specific setpoint methodology study.~~ Westinghouse Setpoint Methodology for Protection Systems, WCAP-11419, Rev. 5 (Unit 1) and WCAP-11366, Rev. 7 (Unit 2).

2

Insert 1 - Bases Background Section

Loss of Voltage Protection

Unit 1

The Unit 1 loss of voltage protection consists of two relays for each of the 4160 V emergency buses. One relay actuates to open the normal supply breakers for the associated emergency buses (bus separation). The other loss of voltage relay provides a start signal for the DG associated with the bus. Both loss of voltage relays have the same nominal trip setpoint and Allowable Value (with different time delays).

Unit 2

The Unit 2 loss of voltage protection consists of three relays for each 4160 V emergency bus. Two relays on each bus actuate to open the normal supply breakers for the associated emergency buses (with a two-out-of-two logic per bus) to provide the bus separation function. The other loss of voltage relay provides a start signal for the associated DG. All three loss of voltage relays have the same nominal trip setpoint and Allowable Value (with different time delays).

Degraded Voltage Protection

In addition to the loss of voltage protection, degraded voltage protection for both Units is provided by two relays on each 4160 V emergency bus and two relays on each 480 V emergency bus. The two relays on each bus actuate upon a reduced voltage condition that exists for an extended time. The relays actuate (in a two-out-of-two logic per bus) to open the normal supply breakers and separate the affected emergency bus from the degraded voltage supply. The two-out-of-two logic helps prevent a spurious relay actuation from causing bus separation.

The Unit 1 and Unit 2 LOP instrumentation is described in UFSAR Chapter 8 (Ref. 1).

Insert Action D.1

D.1

Condition D applies when one loss of voltage channel per bus is inoperable and is applicable only to those LOP Functions on Table 3.3.5-1 with a single loss of voltage channel per bus. The Condition is applicable to a single inoperable channel on one bus or a single inoperable channel on each bus.

Required Action D.1 requires restoring the inoperable 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 a LOP instrument actuation during this interval.

Insert SR 3.3.5.3

<u>SR 3.3.5.3</u>

This SR ensures the individual channel ESF RESPONSE TIMES are less than or equal to the maximum values assumed in the accident analysis. The response time acceptance criteria for instrument channels with a required response time are specified in the LRM. Individual component response times are not modeled in the analyses. The analyses model the overall or total elapsed time, from the point at which the parameter exceeds the trip setpoint value at the sensor, to the point at which the equipment reaches the required functional state. Response time may be verified by any series of sequential, overlapping or total channel measurement such that the entire response time is measured.

The Bases for Surveillance Requirement 3.3.2.9 in LCO 3.3.2, "ESFAS Instrumentation" contains a more detailed description of how the required response time verification may be accomplished. The SR 3.3.2.9 Bases is applicable to SR 3.3.5.3 including the Unit 2 option to use the summation of allocated response times.

ESF RESPONSE TIME verifications are conducted on an 18 month STAGGERED TEST BASIS. The final actuation device response time, which makes up the bulk of the total response time, is included in the verification of each channel. The 18 month Frequency is consistent with the typical refueling cycle and is based on unit operating experience, which shows that random failures of instrumentation components causing serious response time degradation, but not channel failure, are infrequent occurrences.

Unit 2

B 3.3 INSTRUMENTATION

B 3.3.6 Containment Purge and Exhaust Isolation Instrumentation

Unit 2

BASES

and Exhaust

42 inch

BACKGROUND

The Unit 2

~~Containment~~ purge and exhaust isolation instrumentation closes the containment isolation valves in the ~~Mini~~ Purge System ~~and the Shutdown Purge System.~~ This action isolates the containment atmosphere from the environment to minimize releases of radioactivity in the event of ~~an~~ accident. ~~The Mini Purge System may be in use during reactor operation and the Shutdown Purge System will be in use with the reactor shutdown.~~

a fuel handling

involving recently irradiated fuel.

1

Containment ~~purge~~ and exhaust isolation initiates on a ~~automatic~~ safety injection (SI) signal ~~through the Containment Isolation~~ - Phase A Function, or by manual actuation of ~~Phase A Isolation.~~ The Bases for LCO 3.3.2, "Engineered ~~Safety~~ Feature Actuation System (~~ESFAS~~) ~~Instrumentation,~~" discuss these modes of initiation.

(2HVR-RQ104A&B)

Two gaseous (Xe-133)

~~Four~~ radiation monitoring channels are ~~also~~ provided as input to the containment purge and exhaust isolation. ~~The four channels measure~~ containment radiation at two locations. One channel is a containment area gamma monitor, and the other three measure radiation in a sample of the containment purge exhaust. The three purge exhaust radiation detectors are of three different types: gaseous, particulate, and iodine monitors. All four detectors will respond to most events that release radiation to containment. However, analyses have not been conducted to demonstrate that all credible events will be detected by more than one monitor. Therefore, for the purposes of this LCO the four channels are not considered redundant. Instead, they are treated as four one-out-of-one Functions. Since the purge exhaust monitors constitute a sampling system, various components such as sample line valves, sample line heaters, sample pumps, and filter motors are required to support monitor OPERABILITY.

The radiation monitors have a measurement range of 10^{-6} to 10^{-1} µCi/cc.

The purge and exhaust

~~Each of the purge~~ systems has inner and outer containment isolation valves in its supply and exhaust ducts. ~~A high radiation signal from any~~ one of the four channels initiates containment purge isolation, which closes both inner and outer containment isolation valves in the Mini Purge System and the Shutdown Purge System. These systems are described in the Bases for ~~LCO 3.6.3~~, "Containment Isolation Valves."

A high radiation signal from the 2HVR-RQ104A gaseous radiation monitor closes the outer isolation valves in each penetration and a high radiation signal from the 2HVR-RQ104B gaseous monitor closes the inner isolation valves in each penetration.
In addition to the automatic closure provided by the high radiation signal each containment purge and exhaust isolation valve may be closed manually by its individual control switch.

Unit 2

BASES

APPLICABLE SAFETY ANALYSES

INSERT BVPS Safety Analysis

2

~~The safety analyses assume that the containment remains intact with penetrations unnecessary for core cooling isolated early in the event, within approximately 60 seconds. The isolation of the purge valves has not been analyzed mechanistically in the dose calculations, although its rapid isolation is assumed. The containment purge and exhaust isolation radiation monitors act as backup to the SI signal to ensure closing of the purge and exhaust valves. They are also the primary means for automatically isolating containment in the event of a fuel handling accident during shutdown. Containment isolation in turn ensures meeting the containment leakage rate assumptions of the safety analyses, and ensures that the calculated accidental offsite radiological doses are below 10 CFR 100 (Ref. 1) limits. [Due to radioactive decay, containment is only required to isolate during fuel handling accidents involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core withing the previous [ ] days).]~~

3

INSERT BVPS LCO Info

The containment purge and exhaust isolation instrumentation satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The LCO requirements ensure that the instrumentation necessary to initiate Containment Purge and Exhaust Isolation, listed in Table 3.3.6-1, is OPERABLE~~.~~ for Unit 2.

1. Manual Initiation

The LCO requires one manual initiation channel per purge and exhaust system isolation valve to be OPERABLE. Containment Purge and Exhaust Isolation may be initiated at any time by using the individual valve control switches in the control room. Each Channel consists of a manual switch and interconnecting circuits to the valve actuator.

~~The LCO requires two channels OPERABLE. The operator can initiate Containment Purge Isolation at any time by using either of two switches in the control room. Either switch actuates both trains. This action will cause actuation of all components in the same manner as any of the automatic actuation signals.~~

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

~~Each channel consists of one push button and the interconnecting wiring to the actuation logic cabinet.~~

~~2. Automatic Actuation Logic and Actuation Relays~~

~~The LCO requires two trains of Automatic Actuation Logic and Actuation Relays OPERABLE to ensure that no single random failure can prevent automatic actuation.~~

BASES

LCO (continued)

3

~~Automatic Actuation Logic and Actuation Relays consist of the same features and operate in the same manner as described for ESFAS Function 1.b, SI, and ESFAS Function 3.a, Containment Phase A Isolation. The applicable MODES and specified conditions for the containment purge isolation portion of these Functions are different and less restrictive than those for their Phase A isolation and SI roles. If one or more of the SI or Phase A isolation Functions becomes inoperable in such a manner that only the Containment Purge Isolation Function is affected, the Conditions applicable to their SI and Phase A isolation Functions need not be entered. The less restrictive Actions specified for inoperability of the Containment Purge Isolation Functions specify sufficient compensatory measures for this case.~~

2 ~~3.~~ Containment Radiation

The LCO specifies ~~four~~ two required channels of ~~radiation~~ gaseous radiation monitors to ensure that the radiation monitoring instrumentation necessary to initiate Containment Purge and Exhaust Isolation remains OPERABLE.

The required gaseous monitors are an in-line type and are mounted directly in the exhaust ductwork. An OPERABLE radiation monitor channel consists of the monitor and includes any associated circuitry necessary to provide the required isolation function.

~~For sampling systems, channel OPERABILITY involves more than OPERABILITY of the 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.~~

~~4. Containment Isolation - Phase A~~

~~Refer to LCO 3.3.2, Function 3.a., for all initiating Functions and requirements.~~

APPLICABILITY

INSERT BVPS Applicability

~~The Manual Initiation, Automatic Actuation Logic and Actuation Relays, Containment Isolation - Phase A, and Containment Radiation Functions are required OPERABLE in MODES 1, 2, 3, and 4, and during movement of [recently] irradiated fuel assemblies [(i.e., fuel that has occupied part of a critical reactor core within the previous [ ] days)] within containment. Under these conditions, the potential exists for an accident that could release significant fission product radioactivity into containment. Therefore, the containment purge and exhaust isolation instrumentation must be OPERABLE in these MODES.~~

4

Unit 2

BASES

APPLICABLITY (continued)

4

While in MODES 5 and 6 without fuel handling in progress, the containment purge and exhaust isolation instrumentation need not be OPERABLE since the potential for radioactive releases is minimized and operator action is sufficient to ensure post accident offsite doses are maintained within the limits of Reference 1.

The Applicability for the containment purge and exhaust isolation on the ESFAS Containment Isolation-Phase A Functions are specified in LCO 3.3.2. Refer to the Bases for LCO 3.3.2 for discussion of the Containment Isolation-Phases A Function Applicability.

ACTIONS

5

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 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 generally made during ~~the performance~~ of ~~a COT~~, when the process instrumentation is set up for adjustment ~~to bring it within specification~~. If the Trip Setpoint is less conservative than ~~the tolerance specified by the calibration procedure~~, the channel must be declared inoperable immediately and the appropriate Condition entered.

specified in Table 3.3.6 - 1

A Note has been added to the ACTIONS to clarify the application of Completion Time rules. The Conditions of this Specification may be entered independently for each Function listed in Table 3.3.6-1. The Completion Time(s) of the inoperable channel(s)/~~train(s)~~ of a Function will be tracked separately for each Function starting from the time the Condition was entered for that Function.

6

A.1

Condition A applies to the failure of one containment purge isolation radiation monitor channel. ~~Since the four containment radiation monitors measure different parameters, failure of a single channel may result in loss of the radiation monitoring Function for certain events. Consequently, the failed channel must be restored to OPERABLE status.~~ The 4 hours allowed to restore the affected channel is justified by the low likelihood of events occurring during this interval, and recognition that ~~one or more of~~ the remaining channels will ~~respond to most events~~.

isolate the purge and exhaust lines on high radiation.

APPLICABLITY (continued)

6

B.1

Condition B applies to all Containment Purge and Exhaust Isolation Functions and addresses the train orientation of the Solid State Protection System (SSPS) and the master and slave relays for these Functions. It also addresses the failure of multiple radiation monitoring channels, or the inability to restore a single failed channel to OPERABLE status in the time allowed for Required Action A.1.

If a train is inoperable, multiple channels are inoperable, or the Required Action and associated Completion Time of Condition A are not met, operation may continue as long as the Required Action for the applicable Conditions of LCO 3.6.3 is met for each valve made inoperable by failure of isolation instrumentation.

A Note is added stating that Condition B is only applicable in MODE 1, 2, 3, or 4.

B.1 and B.2 ~~C.1 and C.2~~ B

Condition ~~C~~ applies to all Containment Purge and Exhaust Isolation ~~Functions and addresses the train orientation of the SSPS and the master and slave relays for these~~ Functions. It ~~also~~ addresses the failure of multiple radiation monitoring channels, or the inability to restore a single failed channel to OPERABLE status in the time allowed for Required Action A.1. If one or more manual initiation channel s are inoperable, or two radiation monitor channels are inoperable, ~~a train is inoperable, multiple channels are inoperable,~~ or the Required Action and associated Completion Time of Condition A are not met, operation may continue as long as the Required Action to place and maintain containment purge and exhaust isolation valves in their closed position is met or the applicable Conditions of LCO ~~3.9.4,~~ 3.9.3 "Containment Penetrations," are met for each valve made inoperable by failure of isolation instrumentation. The Completion Time for these Required Actions is Immediately.

~~A Note states that Condition C is applicable during movement of [recently] irradiated fuel assemblies within containment.~~

SURVEILLANCE REQUIREMENTS

A Note has been added to the SR Table to clarify that Table 3.3.6-1 determines which SRs apply to which Containment Purge and Exhaust Isolation Functions.

Unit 2

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.6.1

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 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.

6

~~SR 3.3.6.2~~

~~SR 3.3.6.2 is the performance of an ACTUATION LOGIC TEST. The train being tested is placed in the bypass condition, thus preventing inadvertent actuation. Through the semiautomatic tester, all possible logic combinations, with and without applicable permissives, are tested for each protection function. In addition, the master relay coil is pulse tested for continuity. This verifies that the logic modules are OPERABLE and there is an intact voltage signal path to the master relay coils. This test is performed every 31 days on a STAGGERED TEST BASIS. The Surveillance interval is acceptable based on instrument reliability and industry operating experience.~~

~~SR 3.3.6.3~~

~~SR 3.3.6.3 is the performance of a MASTER RELAY TEST. The MASTER RELAY TEST is the energizing of the master relay, verifying contact operation and a low voltage continuity check of the slave relay~~

Unit 2

BASES

SURVEILLANCE REQUIREMENTS (continued)

6

~~coil. Upon master relay contact operation, a low voltage is injected to the slave relay coil. This voltage is insufficient to pick up the slave relay, but large enough to demonstrate signal path continuity. This test is performed every 31 days on a STAGGERED TEST BASIS. The Surveillance interval is acceptable based on instrument reliability and industry operating experience.~~

SR 3.3.6.2 ~~SR 3.3.6.4~~

COT

A COT is performed every 92 days on each required channel to ensure the entire channel will perform the intended Function. A successful test of ~~the~~ any required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable ~~CHANNEL OPERATIONAL TEST~~ COT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications ~~and non-Technical Specifications tests at least once per refueling interval with applicable extensions~~ Surveillance Requirements. The Frequency is based on the staff recommendation for increasing the availability of radiation monitors according to NUREG-1366 (Ref. ~~2~~ 4). This test verifies the capability of the instrumentation to provide the containment purge and exhaust system isolation. The setpoint shall be left consistent with the current unit specific calibration procedure tolerance.

7

~~SR 3.3.6.5~~

~~SR 3.3.6.5 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. 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 acceptable based on instrument reliability and industry operating experience.~~

6

SR 3.3.6.3 ~~SR 3.3.6.6~~

~~SR 3.3.6.6~~ SR 3.3.6.3 is the performance of a TADOT. This test is a check of the Manual Actuation Functions and is performed every [18] months. Each

BASES

SURVEILLANCE REQUIREMENTS (continued)

for each valve.

8

Manual Actuation Function is tested ~~up to, and including, the master relay coils. A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable TADOT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions. In some instances, the~~ test includes actuation of the end device (i.e., ~~pump starts,~~ valve cycles~~, etc.~~).

The

~~The test also includes trip devices that provide actuation signals directly to the SSPS, bypassing the analog process control equipment.~~ The SR is modified by a Note that excludes verification of setpoints during the TADOT. The Functions tested have no setpoints associated with them.

6

The Frequency is based on the known reliability of the Function and the redundancy available, and has been shown to be acceptable through operating experience.

SR 3.3.6.4 ~~SR 3.3.6.7~~

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.

9

The Frequency is based on operating experience and is consistent with the typical industry refueling cycle.

REFERENCES

1. ~~10 CFR 100.11.~~ Unit 2 UFSAR 15.7.4.

2. ~~NUREG-1366, [date].~~ NUREG-0800, Section 15.0.1, Rev.0, July 2000.

4. NUREG-1366, Improvements to Technical Specifications Surveillance Requirements, 12/1/1992.

5. NUREG-1431, "Standard Technical Specifications for Westinghouse Plants," Rev. 2, April, 2001.

3. NRC Safety Evaluation Report for Unit 1 Amendment 23, 12/12/79.

3.3.6 BASES INSERTS

BVPS Specific Safety Analysis

During refueling operations, the postulated event that results in the most severe radiological consequences is a fuel handling accident (Ref. 1). The limiting fuel handling accident analyzed in Reference 1, includes dropping a single irradiated fuel assembly and handling tool (conservatively estimated at 2500 pounds) directly onto another irradiated fuel assembly resulting in both assemblies being damaged. The analysis assumes a 100-hour decay time prior to moving irradiated fuel.

The applicable limits for offsite and control room dose from a fuel handling accident are specified in 10 CFR 50.67. Standard Review Plan, Section 15.0.1, Rev 0 (Ref. 2) provides an additional offsite dose criteria of 6.3 rem total effective dose equivalent (TEDE) for fuel handling accidents.

The water level requirements of LCO 3.9.6, "Refueling Cavity Water Level", in conjunction with a minimum decay time of 100 hours prior to irradiated fuel movement, ensure that the resulting offsite and control room dose from the limiting fuel handling accident is within the limits required by 10 CFR 50.67 and within the acceptance criteria of Reference 2 without the need for containment purge and exhaust isolation.

Therefore, the instrumentation requirements of LCO 3.3.6 "Containment Purge and Exhaust Isolation Instrumentation" are only applicable during refueling operations involving recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 100 hours). Current requirements based on the decay time of the fuel prevent the movement of recently irradiated fuel. However, the requirements for containment purge and exhaust isolation instrumentation are retained in the Technical Specifications in case these requirements are necessary to support fuel movement involving recently irradiated fuel.

BVPS Specific LCO Insert

The LCO is modified by a note that states "This specification is only applicable to Unit 2. Unit 1 relies on filtration of the containment purge and exhaust system effluent by an OPERABLE train of Supplemental Leak Collection and Release System (SLCRS) instead of isolation. Unit 1 must rely on filtration due to the design of the Unit 1 Containment Purge and Exhaust System ductwork where the radiation monitors are located. The Unit 1 ductwork is not designed to withstand a seismic event (Ref. 3).

BVPS Specific Applicability Insert

The containment purge and exhaust isolation instrument requirements are applicable during movement of recently irradiated fuel assemblies or the movement of fuel assemblies over recently irradiated fuel assemblies within containment because this is when there is a potential for the limiting fuel handling accident. In MODES 1, 2, 3, and 4, containment penetration requirements (including the purge and exhaust isolation valves) are addressed by LCO 3.6.3, "Containment Isolation Valves" and LCO 3.6.1, "Containment OPERABILITY". In MODES 5 and 6, when movement of irradiated fuel assemblies within containment is not being conducted,

(continued)

the potential for a fuel handling accident does not exist. Additionally, due to radioactive decay, a fuel handling accident that does not involve recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 100 hours) will result in doses that are well within the guideline values specified in 10 CFR 50.67 even without containment closure capability. Therefore, under these conditions no requirements are placed on the containment purge and exhaust isolation instrumentation.

Although movement of recently irradiated fuel is not currently permitted, the requirements for containment purge and exhaust isolation instrumentation are retained in the Technical Specifications in case these requirements are necessary to support the assumptions of a safety analysis for fuel movement involving recently irradiated fuel consistent with the guidance of Ref. 5.

V

B 3.3 INSTRUMENTATION

B 3.3.7 Control Room Emergency ~~Filtration~~ System (CREFS) Actuation Instrumentation

Ventilation

V

BASES

BACKGROUND

INSERT 1

1

The CREFS provides an enclosed control room environment from which the unit can be operated following an uncontrolled release of radioactivity. During normal operation, the Auxiliary Building Ventilation System provides control room ventilation. Upon receipt of an actuation signal, the CREFS initiates filtered ventilation and pressurization of the control room. This system is described in the Bases for LCO 3.7.10, "Control Room Emergency Filtration System."

The actuation instrumentation consists of redundant radiation monitors in the air intakes and control room area. A high radiation signal from any of these detectors will initiate both trains of the CREFS. The control room operator can also initiate CREFS trains by manual switches in the control room. The CREFS is also actuated by a safety injection (SI) signal. The SI Function is discussed in LCO 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation."

intake air

1

APPLICABLE SAFETY ANALYSES

V

The control room must be kept habitable for the operators stationed there during accident recovery and post accident operations.

The CREFS acts to terminate the supply of unfiltered outside air to the control room, initiate filtration, and pressurize the control room. These actions are necessary to ensure the control room is kept habitable for the operators stationed there during accident recovery and post accident operations by minimizing the radiation exposure of control room personnel.

1

INSERT 2

In MODES 1, 2, 3, and 4, the radiation monitor actuation of the CREFS is a backup for the SI signal actuation. This ensures initiation of the CREFS during a loss of coolant accident or steam generator tube rupture.

The radiation monitor actuation of the CREFS in MODES 5 and 6, and during movement of [recently] irradiated fuel assemblies are the primary means to ensure control room habitability in the event of a fuel handling or waste gas decay tank rupture accident.

The CREFS actuation instrumentation satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

V

BASES

LCO

2

The LCO requirements ensure that instrumentation necessary to initiate the CREFS is OPERABLE.

V 1. Manual Initiation

trains

(i.e., isolate control room ventilation and start one Unit 2 CREVS fan aligned for filtration and pressurization).

The LCO requires two ~~channels~~ OPERABLE. The operator can initiate the CREFS 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.

INSERT 3

(pushbuttons)

a single train

Each manual initiation train consists of a switch (pushbutton) in the control room, and the interconnecting wiring to the actuating relays.

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

~~Each channel consists of one push button and the interconnecting wiring to the actuation logic cabinet.~~

3

~~2. Automatic Actuation Logic and Actuation Relays~~

~~The LCO requires two trains of Actuation Logic and Relays OPERABLE to ensure that no single random failure can prevent automatic actuation.~~

~~Automatic Actuation Logic and Actuation Relays consist of the same features and operate in the same manner as described for ESFAS Function 1.b., SI, in LCO 3.3.2. The applicable MODES and specified conditions for the CREFS portion of these functions are different and less restrictive than those specified for their SI roles.~~ If one or more of the ~~SI~~ functions becomes inoperable in such a manner that only the CREFS function is 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.

CIB

V

Move to CIB Function description on next page

V

2 ~~3.~~ Control Room Radiation

Area

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.

V

The required Unit 1 radiation monitors are designated RM-1RM-218 A & B with a measurement range of 10^{-2} to 10^{3} mR/hr. The required Unit 2 radiation monitors are designated 2RMC-RQ201 & 202 with a measurement range of 10^{-2} to 10^{3} mR/hr.

~~For sampling systems, channel OPERABILITY involves more than OPERABILITY of channel electronics. OPERABILITY may also require correct valve lineups, sample pump operation, and filter~~

Moved from CTS Table 3.3-6.

V

BASES

LCO (continued)

3

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~~.

3

4

~~4.~~ ~~Safety Injection~~ Containment Isolation Phase B (CIB)

Insert CIB Function description from previous page.

Refer to LCO 3.3.2, Function ~~4~~ 3.b, for all initiating Functions and requirements.

APPLICABILITY

INSERT 4

4

The ~~CREFS Functions~~ must be OPERABLE in MODES 1, 2, 3, ~~4, and~~ movement of ~~[recently] 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.

V

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~~ CIB Function Applicability.

ACTIONS

5

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 generally~~ made during the performance ~~of a~~ COT, when the ~~process~~ instrumentation is set up for adjustment to bring it within specification. If the Trip Setpoint is less conservative than ~~the tolerance specified by the calibration procedure~~ required in Table 3.3.7 -1, the channel must be declared inoperable immediately and the appropriate Condition entered.

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 3.3.7-1 in the accompanying LCO. The Completion Time(s) of the inoperable channel(s)/train(s) of a Function will be tracked separately for each Function starting from the time the Condition was entered for that Function.

4

A.1

Condition A applies to the ~~actuation logic train Function of the CREFS, the~~ radiation monitor channel Functions, and the manual ~~channel~~ initiation train Functions.

ACTIONS (continued)

4

If one train is inoperable, or one radiation monitor channel is inoperable in one or more Functions, 7 days are permitted to restore it to OPERABLE status. The 7 day Completion Time is the same as is allowed if one train of the mechanical portion of the system is inoperable. The basis for this Completion Time is the same as provided in LCO 3.7.10. If the channel/train cannot be restored to OPERABLE status, one CREFS train must be placed in the emergency ~~radiation protection~~ pressurization mode of operation. This accomplishes the actuation instrumentation Function and places the unit in a conservative mode of operation. V

~~The Required Action for Condition A is modified by a Note that requires placing one CREFS train in the toxic gas protection mode instead of the [radiation protection] mode of operation if the automatic transfer to toxic gas protection mode is inoperable. This ensures the CREFS train is placed in the most conservative mode of operation relative to the OPERABILITY of the associated actuation instrumentation.~~

~~B.1.1, B.1.2, and B.2~~ B.1 and B.2

V

Condition B applies to the failure of ~~two CREFS actuation trains,~~ trains two radiation monitor channels, or two manual ~~channels~~. The first Required Action is to place one CREFS train in the emergency ~~[radiation protection]~~ pressurization mode of operation immediately. This accomplishes the actuation instrumentation Function that may have been lost and places the unit in a conservative mode of operation. The applicable Conditions and Required Actions of LCO 3.7.10 must also be entered for the remaining CREFS train made inoperable by the inoperable actuation instrumentation. This ensures appropriate limits are placed upon train inoperability as discussed in the Bases for LCO 3.7.10. V

6

~~Alternatively, both trains may be placed in the emergency [radiation protection] mode. This ensures the CREFS function is performed even in the presence of a single failure.~~

4

~~The Required Action for Condition B is modified by a Note that requires placing one CREFS train in the toxic gas protection mode instead of the [radiation protection] mode of operation if the automatic transfer to toxic gas protection mode is inoperable. This ensures the CREFS train is placed in the most conservative mode of operation relative to the OPERABILITY of the associated actuation instrumentation.~~

V

BASES

ACTIONS (continued)

C.1 and C.2

Condition C applies when the Required Action and associated Completion Time for Condition A or B have not been met and the 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.

D.1 and D.2

Condition D applies when the Required Action and associated Completion Time for Condition A or B have not been met when ~~[recently] irradiated fuel assemblies are being moved. Movement of [recently] irradiated fuel~~ assemblies must be suspended immediately to reduce the risk of accidents that would require CREFS actuation.

moving recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 100 hours) or fuel assemblies over recently irradiated fuel. Fuel movement involving recently irradiated fuel

V

4

~~E.1~~

~~Condition E applies when the Required Action and associated Completion Time for Condition A or B have not been met in MODE 5 or 6. Actions must be initiated to restore the inoperable train(s) to OPERABLE status immediately to ensure adequate isolation capability in the event of a waste gas decay tank rupture.~~

SURVEILLANCE REQUIREMENTS

A Note has been added to the SR Table to clarify that Table 3.3.7-1 determines which SRs apply to which CREFS Actuation Functions.

V

SR 3.3.7.1

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.

V

BASES

SURVEILLANCE REQUIREMENTS (continued)

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 3.3.7.2

COT

V

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. A successful test of ~~the~~ required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable ~~CHANNEL OPERATIONAL TEST~~ of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications ~~and non-Technical Specifications tests at least once per refueling interval with applicable extensions~~. 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.~~

any

7

Surveillance Requirements

The Frequency is based on the staff recommendation for increasing the availability of radiation monitors according to NUREG-1366 (Ref. 3).

8

4

SR 3.3.7.3

SR 3.3.7.3 is the performance of an ACTUATION LOGIC TEST. The train being tested is placed in the bypass condition, thus preventing inadvertent actuation. Through the semiautomatic tester, all possible logic combinations, with and without applicable permissives, are tested for each protection function. In addition, the master relay coil is pulse tested for continuity. This verifies that the logic modules are OPERABLE and there is an intact voltage signal path to the master relay coils. This test is performed every 31 days on a STAGGERED TEST BASIS. The Frequency is justified in WCAP-10271-P-A, Supplement 2, Rev.1.

SR 3.3.7.4

SR 3.3.7.4 is the performance of a MASTER RELAY TEST. The MASTER RELAY TEST is the energizing of the master relay, verifying

V

BASES

SURVEILLANCE REQUIREMENTS (continued)

4

~~contact operation and a low voltage continuity check of the slave relay coil. Upon master relay contact operation, a low voltage is injected to the slave relay coil. This voltage is insufficient to pick up the slave relay, but large enough to demonstrate signal path continuity. This test is performed every 31 days on a STAGGERED TEST BASIS. The Frequency is acceptable based on instrument reliability and industry operating experience.~~

~~SR 3.3.7.5~~

~~SR 3.3.7.5 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. 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 acceptable based on instrument reliability and industry operating experience.~~

SR 3.3.7.6 3

9

SR 3.3.7.6 is the performance of a TADOT. This test is a check of the Manual Actuation Functions and is performed every [18] months. Each Manual Actuation Function is tested ~~up to, and including, the master relay coils~~. A successful test of ~~the~~ any required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable TADOT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications Surveillance Requirements ~~and non-Technical Specifications tests at least once per refueling interval with applicable extensions. In some instances, the test includes actuation of the end device (i.e., pump starts, valve cycles, etc.).~~ The test may either include actuation of the end device (i.e., dampers close, and fan starts, etc.), or test up to the point of overlap with other tests that demonstrate actuation of the end devices.

7

~~The test also includes trip devices that provide actuation signals directly to the Solid State Protection System, bypassing the analog process control equipment.~~ The Frequency is based on the known reliability of the Function and the redundancy available, and has been shown to be acceptable through operating experience. The SR is modified by a Note that excludes verification of setpoints during the TADOT. The Functions tested have no setpoints associated with them.

V

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.7.~~7~~ 4

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 ~~None.~~

1. Unit 1 UFSAR Table 11.3-7 and Unit 2 UFSAR Table 15.0-13.
2. NUREG-1431, "Standard Technical Specifications for Westinghouse Plants," Rev. 2, April, 2001.
3. NUREG-1366, Improvements to Technical Specifications Surveillance Requirements, 12/1/1992.

10

INSERT 1 (3.3.7 Bases Background)

The CREVS provides an enclosed common control room environment from which both units can be operated following an uncontrolled release of radioactivity. During normal operation, the control room ventilation system recirculates the control room air and provides unfiltered makeup air and cooling. Upon receipt of a CREVS actuation signal from either unit, the Unit 1 and 2 control room ventilation intake and exhaust ducts are isolated to prevent unfiltered makeup air from entering the control room. In addition, the CREVS actuation signal from either unit will also automatically start one Unit 2 CREVS fan to provide filtered makeup air to pressurize the control room. If the preferred Unit 2 CREVS fan does not start, the backup Unit 2 fan will automatically start. Unit 1 may take credit for the operation of one or both of the Unit 2 CREVS fans and filters. One of the two Unit 1 CREVS fans and single filter must be manually aligned and placed in service if required. Once the control room ventilation intake and exhaust ducts are isolated, and the CREVS fan is providing filtered makeup, control room ventilation is in the emergency pressurization mode of operation. The CREVS is described in the Bases for LCO 3.7.10, "Control Room Emergency Ventilation System."

The CREVS actuation instrumentation consists of redundant control room area radiation monitors for each unit, Containment Isolation - Phase B (CIB) signal from each unit, and two train related manual switches (pushbuttons) in each unit's control room. A high radiation signal from the radiation monitors in either unit, a CIB from either unit, or manual switch actuation from either unit such that both trains of CREVS receive an actuation signal, will initiate the CREVS actuation sequence described above. The CIB Function is discussed in LCO 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation."

INSERT 2 (3.3.7 Safety Analyses Bases)

The applicable safety analyses for all design basis accidents considered in MODES 1-4 (except LOCA) assume manual initiation of the emergency pressurization mode of operation of control room ventilation (i.e., control room ventilation isolation, filtered makeup, and pressurization). The LOCA accident analysis assumes an automatic control room ventilation system isolation on a CIB signal and subsequent manual initiation of a CREVS fan for filtered makeup and pressurization of the control room. Although the CIB signal will automatically start a CREVS fan and filtered flow path, a 30-minute delay to allow for manual initiation of a CREVS fan and filtered flow path is specifically assumed in all analyses to permit the use of a Unit 1 CREVS fan and filtration flow path which require manual operator action to place in service (Ref. 1).

The current safety analyses do not assume the control room area radiation monitors provide a CREVS actuation signal for any design basis accident. However, requirements for the radiation monitors to be OPERABLE are retained in case the monitors are required to support the assumptions of a fuel handling accident analysis for the movement of recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 100 hours) or the movement of fuel over recently irradiated fuel consistent with the guidance of Ref. 2.

INSERT 3 (3.3.7 LCO Bases)

However, when Unit 1 is relying on the Unit 1 CREVS train, as one of the two required trains, only one of the Unit 1 manual pushbuttons is required to start a Unit 2 Fan, but both Unit 1 pushbuttons must be capable of isolating the control room. In this case, the Unit 1 requirement (on Table 3.3.7-1) for two trains of manual initiation is met by one train of manual initiation that is capable of isolating the control room and starting a Unit 2 fan and one train of manual initiation that is capable of isolating the control room. The capability to manually place the Unit 1 CREVS fan and filtered flow path in service is addressed by the OPERABILITY requirements for the Unit 1 CREVS equipment contained in LCO 3.7.10, "Control Room Emergency Ventilation System."

INSERT 4 (3.3.7 Applicability Bases)

The CREVS manual actuation instrumentation must be operable in Modes 1, 2, 3, and 4 to provide the required CREVS initiation assumed in the applicable safety analyses. In Modes 5 and 6, when no fuel movement involving recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 100 hours) is taking place, there are no requirements for CREVS instrumentation OPERABILITY consistent with the safety analyses assumptions applicable in these MODES. In addition, both manual and radiation monitor instrument channels are required OPERABLE when moving recently irradiated fuel or moving fuel over recently irradiated fuel. Although the movement of recently irradiated fuel is not currently permitted, these requirements are retained in the Technical Specifications in case the CREVS instrumentation is necessary to support the assumptions of a safety analysis for fuel movement involving recently irradiated fuel, consistent with the guidance of Ref. 2.

1

B 3.3 INSTRUMENTATION

B 3.3.8 Fuel Building Air Cleanup System (FBACS) Actuation Instrumentation

BASES

BACKGROUND

The FBACS ensures that radioactive materials in the fuel building atmosphere following a fuel handling accident [involving handling recently irradiated fuel] or a loss of coolant accident (LOCA) are filtered and adsorbed prior to exhausting to the environment. The system is described in the Bases for LCO 3.7.13, "Fuel Building Air Cleanup System." The system initiates filtered ventilation of the fuel building automatically following receipt of a high radiation signal (gaseous or particulate) or a safety injection (SI) signal. Initiation may also be performed manually as needed from the main control room.

High gaseous and particulate radiation, each monitored by either of two monitors, provides FBACS initiation. Each FBACS train is initiated by high radiation detected by a channel dedicated to that train. There are a total of two channels, one for each train. Each channel contains a gaseous and particulate monitor. High radiation detected by any monitor or an SI signal from the Engineered Safety Features Actuation System (ESFAS) initiates fuel building isolation and starts the FBACS. These actions function to prevent exfiltration of contaminated air by initiating filtered ventilation, which imposes a negative pressure on the fuel building. Since the radiation monitors include an air sampling system, various components such as sample line valves, sample line heaters, sample pumps, and filter motors are required to support monitor OPERABILITY.

APPLICABLE SAFETY ANALYSES

The FBACS ensures that radioactive materials in the fuel building atmosphere following a fuel handling accident [involving handling recently irradiated fuel] or a LOCA are filtered and adsorbed prior to being exhausted to the environment. This action reduces the radioactive content in the fuel building exhaust following a LOCA or fuel handling accident so that offsite doses remain within the limits specified in 10 CFR 100 (Ref. 1).

The FBACS actuation instrumentation satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The LCO requirements ensure that instrumentation necessary to initiate the FBACS is OPERABLE.

1

BASES

LCO (continued)

1. Manual Initiation

The LCO requires two channels OPERABLE. The operator can initiate the FBACS 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.

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

Each channel consists of one push button and the interconnecting wiring to the actuation logic cabinet.

2. Automatic Actuation Logic and Actuation Relays

The LCO requires two trains of Actuation Logic and Relays OPERABLE to ensure that no single random failure can prevent automatic actuation.

Automatic Actuation Logic and Actuation Relays consist of the same features and operate in the same manner as described for ESFAS Function 1.b., SI, in LCO 3.3.2. The applicable MODES and specified conditions for the FBACS portion of these functions are different and less restrictive than those specified for their SI roles. If one or more of the SI functions becomes inoperable in such a manner that only the FBACS function is affected, the Conditions applicable to their SI function need not be entered. The less restrictive Actions specified for inoperability of the FBACS functions specify sufficient compensatory measures for this case.

3. Fuel Building Radiation

The LCO specifies two required Gaseous Radiation Monitor channels and two required Particulate Radiation Monitor channels to ensure that the radiation monitoring instrumentation necessary to initiate the FBACS remains OPERABLE.

For sampling systems, channel OPERABILITY involves more than OPERABILITY of channel electronics. OPERABILITY may also require correct valve lineups, sample pump operation, filter motor operation, detector OPERABILITY, if these supporting features are

1

BASES

LCO (continued)

necessary for actuation to occur under the conditions assumed by the safety analyses.

Only the Trip Setpoint is specified for each FBACS Function in the LCO. The Trip Setpoint limits account for instrument uncertainties, which are defined in the Unit Specific Setpoint Calibration Procedure (Ref. 2).

APPLICABILITY

The manual FBACS initiation must be OPERABLE in MODES [1, 2, 3, and 4] and when moving [recently] irradiated fuel assemblies in the fuel building, to ensure the FBACS operates to remove fission products associated with leakage after a LOCA or a fuel handling accident [involving handling recently irradiated fuel]. The automatic FBACS actuation instrumentation is also required in MODES [1, 2, 3, and 4] to remove fission products caused by post LOCA Emergency Core Cooling Systems leakage.

High radiation initiation of the FBACS must be OPERABLE in any MODE during movement of [recently] irradiated fuel assemblies in the fuel building to ensure automatic initiation of the FBACS when the potential for the limiting fuel handling accident exists. [Due to radioactive decay, the FBACS instrumentation is only required to be OPERABLE during fuel handling involving handling recently irradiated fuel (i.e., fuel that has *occupied part of a critical reactor core within the previous [ ] days).]*

While in MODES 5 and 6 without fuel handling [involving handling recently irradiated fuel] in progress, the FBACS instrumentation need not be OPERABLE since a fuel handling accident [involving handling recently irradiated fuel] cannot occur.

ACTIONS

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 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 generally made during the performance of a COT, when the process instrumentation is set up for adjustment to bring it within specification. If the Trip Setpoint is less conservative than the tolerance specified by the calibration procedure, the channel must be declared inoperable immediately and the appropriate Condition entered.

LCO 3.0.3 is not applicable while in MODE 5 or 6. However, since irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4, the

BASES

ACTIONS (continued)

ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, 3, or 4 would require the unit to be shutdown unnecessarily.

A second Note has been added to the ACTIONS to clarify the application of Completion Time rules. The Conditions of this Specification may be entered independently for each Function listed in Table 3.3.8-1 in the accompanying LCO. The Completion Time(s) of the inoperable channel(s)/train(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 actuation logic train function of the Solid State Protection System (SSPS), the radiation monitor functions, and the manual function. Condition A applies to the failure of a single actuation logic train, radiation monitor channel, or manual channel. If one channel or train is inoperable, a period of 7 days is allowed to restore it to OPERABLE status. If the train cannot be restored to OPERABLE status, one FBACS train must be placed in operation. This accomplishes the actuation instrumentation function and places the unit in a conservative mode of operation. The 7 day Completion Time is the same as is allowed if one train of the mechanical portion of the system is inoperable. The basis for this time is the same as that provided in LCO 3.7.13.

B.1.1, B.1.2, B.2

Condition B applies to the failure of two FBACS actuation logic trains, two radiation monitors, or two manual channels. The Required Action is to place one FBACS train in operation immediately. This accomplishes the actuation instrumentation function that may have been lost and places the unit in a conservative mode of operation. The applicable Conditions and Required Actions of LCO 3.7.13 must also be entered for the FBACS train made inoperable by the inoperable actuation instrumentation. This ensures appropriate limits are placed on train inoperability as discussed in the Bases for LCO 3.7.13.

BASES

ACTIONS (continued)

Alternatively, both trains may be placed in the emergency [radiation protection] mode. This ensures the FBACS Function is performed even in the presence of a single failure.

C.1

Condition C applies when the Required Action and associated Completion Time for Condition A or B have not been met and [recently] irradiated fuel assemblies are being moved in the fuel building. Movement of [recently] irradiated fuel assemblies in the fuel building must be suspended immediately to eliminate the potential for events that could require FBACS actuation.

D.1 and D.2

Condition D applies when the Required Action and associated Completion Time for Condition A or B have not been met and the 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.

SURVEILLANCE REQUIREMENTS

A Note has been added to the SR Table to clarify that table 3.3.8-1 determines which SRs apply to which FBACS Actuation Functions.

SR 3.3.8.1

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.

BASES

SURVEILLANCE REQUIREMENTS (continued)

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 3.3.8.2

A COT is performed once every 92 days on each required channel to ensure the entire channel will perform the intended function. A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable CHANNEL OPERATIONAL TEST of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions. This test verifies the capability of the instrumentation to provide the FBACS actuation. The setpoints shall be left consistent with the unit specific calibration procedure tolerance. The Frequency of 92 days is based on the known reliability of the monitoring equipment and has been shown to be acceptable through operating experience.

SR 3.3.8.3

[SR 3.3.8.3 is the performance of an ACTUATION LOGIC TEST. The actuation logic is tested every 31 days on a STAGGERED TEST BASIS. All possible logic combinations, with and without applicable permissives, are tested for each protection function. 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.]

SR 3.3.8.4

SR 3.3.8.4 is the performance of a TADOT. This test is a check of the manual actuation functions and is performed every [18] months. Each manual actuation function is tested up to, and including, the master relay

1

BASES

SURVEILLANCE REQUIREMENTS (continued)

coils. A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable TADOT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions. In some instances, the test includes actuation of the end device (e.g., pump starts, valve cycles, etc.). The Frequency is based on operating experience and is consistent with the typical industry refueling cycle. The SR is modified by a Note that excludes verification of setpoints during the TADOT. The Functions tested have no setpoints associated with them.

SR 3.3.8.5

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

1. 10 CFR 100.11.
2. Unit Specific Setpoint Calibration Procedure.

Boron Dilution Detection Instrumentation
B 3.3.8

~~BDPS 3.3.9~~

1

B 3.3 INSTRUMENTATION

~~B 3.3.9 Boron Dilution Protection System (BDPS)~~

BASES

B 3.3.8 Boron Dilution Detection Instrumentation

BACKGROUND

Insert 1

1

The primary purpose of the BDPS is to mitigate the consequences of the inadvertent addition of unborated primary grade water into the Reactor Coolant System (RCS) when the reactor is in a shutdown condition (i.e., MODES 2, 3, 4, and 5).

The BDPS utilizes two channels of source range instrumentation. Each source range channel provides a signal to both trains of the BDPS. A unit computer is used to continuously record the counts per minute provided by these signals. At the end of each minute, an algorithm compares the counts per minute value (flux rate) of that 1 minute interval with the counts per minute value for the previous nine, 1 minute intervals. If the flux rate during a 1 minute interval is greater than or equal to twice the flux rate during any of the prior nine 1 minute intervals, the BDPS provides a signal to initiate mitigating actions.

Upon detection of a flux doubling by either source range instrumentation train, an alarm is sounded to alert the operator and valve movement is automatically initiated to terminate the dilution and start boration. Valves that isolate the *refueling water storage tank (RWST) are opened to supply 2000 ppm borated* water to the suction of the charging pumps, and valves which isolate the Chemical and Volume Control System (CVCS) are closed to terminate the dilution.

APPLICABLE SAFETY ANALYSES

Insert 2

1

The BDPS senses abnormal increases in source range counts per minute (flux rate) and actuates CVCS and RWST valves to mitigate the consequences of an inadvertent boron dilution event as described in FSAR, Chapter 15 (Ref. 1). The accident analyses rely on automatic BDPS actuation to mitigate the consequences of inadvertent boron dilution events.

The BDPS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

Insert 3

1

LCO 3.3.9 provides the requirements for OPERABILITY of the instrumentation and controls that mitigate the consequences of a boron dilution event. Two redundant trains are required to be OPERABLE to provide protection against single failure.

Because the BDPS utilizes the source range instrumentation as its detection system, the OPERABILITY of the detection system, (i.e., the

---

LCO (continued)

1

flux doubling algorithm, the alarms, and signals to the various valves) for one SRM is also required for each train in the system to be considered OPERABLE. Therefore, with both SRMs inoperable for supporting the BDPS, both trains are inoperable.

APPLICABILITY

Insert 4

1

The BDPS must be OPERABLE in MODES [2], 3, 4, and 5 because the safety analysis identifies this system as the primary means to mitigate an inadvertent boron dilution of the RCS.

The BDPS OPERABILITY requirements are not applicable in MODE[S] 1 [and 2] because an inadvertent boron dilution would be terminated by a source range trip, a trip on the Power Range Neutron Flux - High (low setpoint nominally 25% RTP), or Overtemperature ΔT. These RTS Functions are discussed in LCO 3.3.1, "RTS Instrumentation."

In MODE 6, a dilution event is precluded by locked valves that isolate the RCS from the potential source of unborated water (according to LCO 3.9.2, "Unborated Water Source Isolation Valves").

The Applicability is modified by a Note that allows the boron dilution flux doubling signal to be blocked during reactor startup in MODES 2 and 3. Blocking the flux doubling signal is acceptable during startup while in MODE 3, provided the reactor trip breakers are closed with the intent to withdraw rods for startup.

ACTIONS

1

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 procedure. Typically, the drift is found to be small and results in a delay of actuation rather than a total loss of function. This determination of setpoint drift is generally made during the performance of a COT when the process instrumentation is set up for adjustment to bring it to within specification. If the Trip Setpoint is less conservative than the tolerance specified by the calibration procedure, the channel must be declared inoperable immediately and the appropriate Condition entered.

<u>A.1</u>

With one train of the BDPS OPERABLE, Required Action A.1 requires that the inoperable train must be restored to OPERABLE status within 72 hours. In this Condition, the remaining the BDPS train is adequate to provide protection. The 72 hour Completion Time is based on the BDPS

ACTIONS (continued)

1

Function and is consistent with Engineered Safety Feature Actuation System Completion Times for loss of one redundant train. Also, the remaining OPERABLE train provides continuous indication of core power status to the operator, has an alarm function, and sends a signal to both trains of the BDPS to assure system actuation.

1

the required channel

A.1 and A.2

~~B.1, B.2.1, B.2.2.1, and B.2.2.2~~

With ~~two trains~~ inoperable, ~~or the Required Action and associated Completion Time of Condition A not met~~, the initial action ~~(Required Action B.1)~~ is to suspend all operations involving positive reactivity additions immediately. This includes withdrawal of control or shutdown rods and intentional boron dilution. A Completion Time of 1 hour is provided to restore ~~one train~~ to OPERABLE status.

3.1.8, "Unborated Water Source Isolation Valves."

closed

A

addressed

As an alternate to restoring ~~one train~~ to OPERABLE status ~~(Required Action B.2.1)~~, Required Action ~~B~~.2.2.1 requires valves ~~listed~~ in LCO ~~3.9.2~~ ~~(Required Action A.2)~~ to be ~~secured~~ to prevent the flow of unborated water into the RCS. Once it is recognized that ~~two trains of the BDPS are~~ inoperable, the operators will be aware of the possibility of a boron dilution, and the ~~1 hour~~ Completion Time is adequate to complete the requirements of LCO ~~3.9.2~~.

is

1

A

3.1.8

Required Action B.2.2.2 accompanies Required Action B.2.2.1 to verify the SDM according to SR 3.1.1.1 within 1 hour and once per 12 hours thereafter. This backup action is intended to confirm that no unintended boron dilution has occurred while the ~~BDPS~~ was inoperable, and that the required SDM has been maintained. The specified Completion Time takes into consideration sufficient time for the initial determination of SDM and other information available in the control room related to SDM.

required channel

1

1

A.1

Required Action ~~[-]~~ is modified by a Note which permits plant temperature changes provided the temperature change is accounted for in the calculated SDM. Introduction of temperature changes, including temperature increases when a positive MTC exists, must be evaluated to ensure they do not result in a loss of required SDM.

required channel is

CHANNEL CHECK

SURVEILLANCE REQUIREMENTS

The ~~BDPS trains are~~ subject to a ~~COT~~ and a CHANNEL CALIBRATION.

1

2

~~SR 3.3.9.1~~ SR 3.3.8.1

Performance of the CHANNEL CHECK once every 12 hours ensures that gross failure of instrumentation has not occurred. A CHANNEL CHECK

The Surveillance Requirements of this LCO need not be performed on alternate detectors until connected and required OPERABLE in order to meet this LCO.

SURVEILLANCE REQUIREMENTS (continued)

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.

1

~~SR 3.3.9.2~~

~~SR 3.3.9.2 requires the performance of a COT every [92] days, to ensure that each train of the BDPS and associated trip setpoint are fully operational. A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable CHANNEL OPERATIONAL TEST of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions. This test shall include verification that the boron dilution alarm setpoint is equal to or less than an increase of twice the count rate within a 10 minute period. The Frequency of [92] days is consistent with the requirements for source range channels in WCAP-10271-P-A (Ref. 2).~~

SR 3.3.8.2 ~~SR 3.3.9.3~~

SR 3.3.8.2 ~~SR 3.3.9.3~~ is the performance of a CHANNEL CALIBRATION every [18] months. CHANNEL CALIBRATION is a complete check of the instrument loop, ~~including the sensor except the neutron detector of the SRM circuit~~ except for the source range neutron detectors which are excluded from the CHANNEL CALIBRATION as stated in the note that modifies the surveillance. The calibration method for neutron detectors is specified in the Bases of LCO 3.3.1, "Reactor Trip System (RTS) Instrumentation.". The test verifies that the channel responds to a measured

1

BASES

SURVEILLANCE REQUIREMENTS (continued)

parameter within the necessary range and accuracy. ~~For the BDPS, the CHANNEL CALIBRATION shall include verification that on a simulated or actual boron dilution flux doubling signal the centrifugal charging pump suction valves from the RWST open, and the normal CVCS volume control tank discharge valves close in the required closure time of ≤ 20 seconds.~~

The Frequency is based on operating experience and consistency with the typical industry refueling cycle.

REFERENCES

~~1. FSAR, Chapter [15].~~ Unit 1 UFSAR Section 14.1.4 and Unit 2 UFSAR Section 15.4.6

~~2. WCAP-10271-P-A, Supplement 2, Revision 1, June 1990.~~

1

1

Insert 1 New Background Section

The purpose of the Boron Dilution Detection Instrumentation is to monitor core reactivity and provide indication of a boron dilution event in the Reactor Coolant System (RCS) when the reactor is in a shutdown condition (i.e., MODES 3, 4, and 5) with all rods fully inserted and the rod control system incapable of rod withdrawal.

The required Boron Dilution Detection Instrumentation consists of one of the two channels of OPERABLE Source Range instrumentation. The requirement for an OPERABLE Source Range channel ensures the capability to monitor core reactivity and detect a boron dilution event. In order to promptly detect a boron dilution event in MODE 3, the required Source Range instrumentation must provide both visual and audible (count rate) indication. The audible count rate helps to assure the prompt detection of an ongoing dilution event. In MODES 4 and 5, a boron dilution event is prevented by the requirements of LCO 3.1.8, "Unborated Water Source Isolation Valves." LCO 3.1.8 requires that unborated water source isolation valves be verified closed which precludes a dilution event (Ref. 1). Therefore, in MODES 4 and 5 the single channel of Source Range instrumentation required OPERABLE by this LCO is only used to monitor core reactivity and is required to provide visual indication only. As the requirements of LCO 3.1.8 preclude a boron dilution event in Modes 4 and 5, the audible count rate is not required for prompt detection of an inadvertent boron dilution in these MODES.

2

For Unit 1, two spare source range detectors are installed (N-33 and N-34). These alternate detectors may be substituted for detectors (N-31and N-32). For Unit 2, alternate detectors (i.e., Gamma-Metrics NE-52A and NE-52B) may also be used to meet the requirements of the LCO. The alternate detectors must be capable of providing the required indication (described above) in order to be considered OPERABLE.

Insert 2 New Applicable Safety Analyses Section

The Boron Dilution Detection Instrumentation specifies the OPERABILITY of instrumentation necessary to detect an inadvertent boron dilution event and monitor core reactivity.

The primary means of preventing an inadvertent boron dilution event during MODES 4 and 5 is the requirements of LCO 3.1.8. LCO 3.1.8 provides assurance the unborated water sources are maintained isolated to prevent dilution of the RCS (Ref. 1). In MODES 4 and 5, the requirement for an OPERABLE Source Range channel only serves to ensure the capability to monitor changes in core reactivity is maintained available. In MODES 4 and 5, no specific safety analysis assumptions are associated with the capability to monitor core reactivity. However, the capability to directly monitor core reactivity with the source range instrumentation provides valuable assurance that the core continues to be maintained in a safe condition.

In Mode 3, the requirements of LCO 3.1.8 to maintain unborated water source valves isolated is not applicable. In addition, with all rods fully inserted and the rod control system incapable of rod withdrawal, the trip functions of LCO 3.3.1, "Reactor Trip System" are not required OPERABLE. Therefore, in this plant condition, an OPERABLE Source Range channel that includes both visual and audible (count rate) indication is required to ensure prompt indication of an inadvertent boron dilution. The prompt notification of a boron dilution event in progress (via an increasing audible count rate) allows time for operator action to stop the dilution prior to criticality.

The Boron Dilution Detection Instrumentation satisfies Criterion 4 of 10 CFR 50.36(c)(2)(ii).

Insert 3 New LCO Section

LCO 3.3.8 specifies the OPERABILITY requirements for the instrumentation necessary to detect a boron dilution event and monitor core reactivity. In the applicable plant condition (all rods fully inserted and the rod control system incapable of rod withdrawal) the specified instrumentation only provides a core reactivity monitoring function and is not required to provide a reactor trip function. Therefore, in MODE 3, a single OPERABLE Source Range channel with both visual and audible (count rate) indication is required to provide prompt indication of an inadvertent boron dilution. In MODES 4 and 5, a single OPERABLE Source Range channel with visual indication is required to provide the necessary core reactivity monitoring function. In MODE 3 operation, with the rod control system capable of rod withdrawal, the requirements of LCO 3.3.1, "Reactor Trip System Instrumentation," are applicable and the requirements of LCO 3.3.8, including the audible count rate, are not applicable and no longer required to provide protection from an inadvertent boron dilution.

2

An alternate Source Range detector may be used to meet the requirements of the LCO as long as it is capable of providing the required indication(s) described above.

Insert 4 New Applicability Section

The Boron Dilution Detection Instrumentation must be OPERABLE in MODES 3, 4, and 5 with all rods fully inserted and the rod control system not capable of rod withdrawal. The requirements of this LCO ensure the capability to detect an inadvertent boron dilution of the RCS in Mode 3 and provide a means for monitoring core reactivity in MODES 4 and 5.

In MODES 3, 4, or 5 with the rod control system capable of rod withdrawal or one or more rods not fully inserted the nuclear instrumentation requirements of LCO 3.3.1, "Reactor Trip System Instrumentation," are applicable and specify that two source range channels must be OPERABLE with reactor trip capability. In addition, in MODE 3, operation with the rod control system capable of rod withdrawal is transitory in preparation for startup operations and manually controlled involving the close monitoring of core reactivity and dilution operations by the operating staff. Therefore, in MODE 3, with the rod control system capable of rod withdrawal, the requirements of LCO 3.3.8, including the audible count rate, are no longer applicable and not required to provide protection from an inadvertent boron dilution.

In MODES 4, 5, or 6 a dilution event is precluded by the requirements of LCO 3.1.8, " Unborated Water Source Isolation Valves" (Ref. 1). Therefore, in MODES 4, 5, and 6, the required Source Range instrumentation provides an indication of core reactivity. LCO 3.9.2, "Nuclear Instrumentation" addresses the Source Range instrument requirements in MODE 6.

During MODE 1 operation, the Source Range instrumentation is normally de-energized. In MODE 1, the Overtemperature ΔT Trip Function required OPERABLE in LCO 3.3.1, "Reactor Trip System," and the requirements of LCO 3.1.6, "Control Bank Insertion Limits provide for the necessary protection from, and detection of, an inadvertent boron dilution event at power (Ref. 1).

In MODE 2, the RCS is intentionally diluted and the rods withdrawn in order to achieve criticality and power operation. Operation in MODE 2 is transitory and manually controlled involving the close monitoring of core reactivity and dilution operation by the operating staff. As such, an inadvertent dilution of the RCS in this mode of operation is unlikely. However, in order to increase power during startup, the Source Range Trip Function required OPERABLE by LCO 3.3.1, must be manually blocked to prevent a reactor trip upon power escalation. If power escalation proceeds in an uncontrolled manner (due to inadvertent dilution) the Source Range Trip would not be blocked and would cause a reactor shutdown and provide protection and detection of an inadvertent dilution (Ref. 1).

3.3 B Instrumentation Bases

JUSTIFICATIONS FOR DEVIATION

ITS 3.3.3 Post Accident Monitoring (PAM) Instrumentation Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. The generic ISTS bases discussions are revised to be more specific to BVPS. These changes include the deletion of general information describing the intended content of the bases as well as reviewers notes. Additional changes are made to reflect the BVPS inclusion of Regulatory Guide 1.97 instrumentation that does not monitor Type A or Category 1 variables or that do monitor Category 1 variables but are approved with exceptions to the Category 1 design requirements. These changes also include statements to explain that certain instruments that monitor Type A or Category 1 variables are not included in the BVPS specific LCO 3.3.3. The ISTS Bases discussion is expanded to include the descriptions of additional exceptions to the requirement for two operable channels. In addition, the ISTS Bases references are revised to include the BVPS Unit 1 and Unit 2 specific references.

2. The generic Bases description of each Post Accident Monitoring Instrument Function specified in Table 3.3.3-1 is revised to make the description more consistent with the BVPS specific instrumentation. These changes include renumbering the descriptions to match the BVPS specific list on Table 3.3.3-1. In addition, information is added where appropriate to adequately describe the BVPS specific instrumentation. Some generic statements that are not applicable to BVPS or that have unnecessary and excessive detail have been deleted. The proposed level of detail for each instrument description is adequate to establish the bases for including that instrument in the PAM technical specification.

3. The Bases text for ISTS Action B.1 is revised to clarify the requirements consistent with the reporting requirements of Specification 5.6.5. Specification 5.6.5 requires that a report be submitted to the NRC within 14 days. ISTS Action B.1 invokes Specification 5.6.5. Therefore, it is not intended to over ride the provisions of Specification 5.6.5. The ITS Action B.1 requires that immediate action be initiated in accordance with Specification 5.6.5. Specification 5.6.5, in turn, allows 14 days to submit the required report. The proposed revision of the ISTS Action description clarifies this relationship between Action B.1 and Specification 5.6.5.

4. The generic ISTS bases for the Channel Check surveillance is revised to provide additional guidance for certain instrumentation. The proposed change clarifies the intent of the Channel Check surveillance for instrumentation for which other channels indicating the same process variable may not be available or where the process (e.g., flow) is not active. In addition, the proposed changes eliminate parts of the definition that do not apply to BVPS. The proposed changes are consistent with the ISTS bases stated intent of the Channel Check to provide a check for "gross channel failure" between channel calibrations rather than a precise measure of channel performance.

5. The ISTS Bases is revised to include deletions and additions that reflect the changes made to the ISTS PAM Surveillance Requirements in Enclosure 1. These changes add a separate TADOT surveillance for the Containment Isolation Valve position indication

function and are discussed in Enclosure 1.

6. The Bases text for ISTS 3.3.3 Action B.1 is revised to clarify the requirements consistent with the reporting requirements of ITS Specification 5.6.5 (ISTS 5.6.7). ITS 5.6.5 contains the PAM reporting requirements to which the Bases for Action B.1 refer. The report requirements of ITS 5.6.5 specify that an outline of the cause of the inoperability be submitted. The Bases for ISTS Action B.1, however, states that the required report include the results of a root cause evaluation of the inoperability. There is a difference between outlining the cause of the inoperability (per ITS 5.6.5) and including the results of a root cause evaluation (per the Bases for Action B.1). As the Bases text for Action B.1 is referring to the requirements of ITS 5.6.5, the text should accurately reflect the requirements of ITS 5.6.5. Therefore, in order to make the Action Bases more consistent with the actual requirements of ITS 5.6.5, the proposed change revises the Bases text by eliminating the implied reference to performing a root cause evaluation. The proposed change is acceptable because it continues to require that the cause of the inoperability be reported, consistent with the requirements of ITS 5.6.5. As such, the proposed change is considered a clarification of the Bases text that does not introduce a technical change to the intent of the ISTS requirements.

ITS 3.3.4 Remote Shutdown Instrumentation Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. The BVPS Emergency Shutdown Panels do not have reactor trip breaker position indication or control. Therefore, the BVPS Emergency Shutdown Panels only support maintaining the plant in a safe shutdown condition from a location outside of the control room. The reactor can not be placed in a shutdown condition from the BVPS Emergency Shutdown Panels. The reactor must be shutdown from the control room prior to evacuation. Therefore, references to initial reactivity control (i.e., reactor shutdown) are not applicable to BVPS.
2. The Main steam safety valves are not specified in the ITS Table B 3.3.4 -1 and are deleted from the bases text. Controls are provided on the BVPS Emergency Shutdown Panels for the SG atmospheric steam dump valves (ADVs). Control of the ADVs is specified on ITS Table B 3.3.4-1.
3. The Generic ISTS Bases text is revised to reflect BVPS specific design features and terminology for the emergency shutdown panels used in the remote shutdown system. This includes being more specific (i.e., identifying indication and control channels found on the BVPS emergency shutdown panels) when describing the instrumentation addressed by the ITS. In addition, the ISTS bases uses both "circuits and channels" to describe the required instrumentation. For consistency, the ISTS bases is revised to use the term channel when describing the required instrumentation. Specifically, the term "required channels" is used to describe the individual instrument functions specified for each remote shutdown function required operable by this LCO. The use of the term "channels and required channels" in the bases is more consistent with other ITS bases (i.e., 3.3.1 and 3.3.2) and provides a more common and appropriate term for defining the instrumentation addressed by the LCO.
4. Changes to the ITS Bases are made to reflect the corresponding ITS LCO requirements. Changes to the ITS LCO are justified in the discussions associated with the LCO changes.
5. The ISTS bases text regarding the operability of a remote shutdown system function is expanded and clarified to better explain the concept of maintaining the required Function operable. The operability requirement for a remote shutdown system Function is new for BVPS. The CTS shutdown system requirements only addressed a set of indications. Therefore, additional bases text was incorporated to more clearly explain the requirement for an operable function.

6. The ISTS channel check bases text is revised by the addition of a clarification consistent with changes made to the CTS requirements for channel checks. The CTS did not require a channel check be performed on the AFW flow indication when that indication was not in service. The CTS allowed this surveillance to be performed when the AFW system was supplying flow to the SGs. The corresponding ISTS channel check requirement does not provide a similar allowance for equipment or components that are not normally in service (except for the allowance to be de-energized). Therefore, a clarification was added to the BVPS ITS bases to explain that systems such as AFW which may be energized but are normally not in service, do not have to be placed in service in order to accomplish the required monthly channel check. Specifically, operation of the AFW system to feed the SGs in Mode 1 is not a desirable operating condition due to the temperature difference of the AFW. As such, the ISTS requirement should not be interpreted to require that each channel be indicating a specific value (i.e., something other than zero) in order to perform the channel check. An acceptable Channel Check only requires that instrument channels monitoring the same parameter should read approximately the same value. Therefore, the proposed change helps to explain the difference between the CTS and ISTS channel check requirements.

7. The ISTS bases text for the safety analyses section and the text describing the necessary support systems are revised to more accurately describe the safety analysis assumptions applicable to the Remote Shutdown System. The proposed changes are necessary to clarify that there are no design basis accidents that are required to be mitigated from the remote shutdown panels and that there is no requirement that a design basis accident (i.e., loss of offsite power or a loss of one train of safety equipment) must be assumed to occur simultaneously with the requirement to evacuate the control room. The applicable event for the Remote Shutdown System is an evacuation of the control room. Thus, the bases for the Remote Shutdown System TS requirements are significantly different than for most systems in the TS. Most systems in the TS have design basis requirements that are derived from the safety analyses assumptions for design basis accidents that involve a single active failure such as the loss of offsite power or one train of the equipment. Therefore, the TS requirements for most systems require redundant systems and components operable. As described above, the Remote Shutdown System is not subject to the same considerations as these other systems and redundant indications and controls and diesel generator controls are not required in the Technical Specifications. As such, the proposed changes to the bases text are consistent with the philosophy of the ISTS, as explained in the staff's Policy Statement on Improved Technical Specifications (i.e., to specify in the TS the minimum requirements associated with the assumptions of the applicable design bases accident analyses).

8. ISTS Table B 3.3.4 – 1 lists the requirements for the Remote Shutdown System. The ISTS table is revised to be more specific to the corresponding BVPS Emergency Shutdown Panel instrumentation, the corresponding CTS requirements, and the applicable BVPS safety analyses discussion in item 7 above. The addition of control functions to the list of Remote Shutdown System functions represents new TS requirements for BVPS. The current BVPS licensing bases for the Remote Shutdown System consists of indicating instrumentation only.

ITS 3.3.5 Loss of Power (LOP) Diesel Generator (DG) Start and Bus Separation Instrumentation Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS 3.3.5 Bases text is revised as necessary to conform to changes made in the corresponding ITS 3.3.5 LCO. This includes such things as revising the title and scope of the specification from "DG start" to "DG start and bus separation instrumentation" or revisions made to the standard Action Conditions." These changes are discussed in the JFD associated with the change to the standard LCO.
2. The standard ISTS 3.3.5 bases text is revised to more accurately reflect the BVPS specific design, safety analyses, setpoint methodology, and licensing bases.
3. The standard Bases text describing the acceptable test of required relay contacts in the bases for a Trip Actuation Device Operational Test (TADOT) is revised to refer to "any" required contacts and to delete references to non-TS testing and a specific surveillance interval. By replacing "the" with "any", the proposed change removes the implication that the applicable instrument channel always has required relay contact(s). If the instrument channel for which the bases description applies has any required relay contacts, the discussion will still apply. In addition, the references to non-TS testing and a specific surveillance interval are removed. References to non-TS testing have no place in the TS. If such testing was required for the operability of the affected instrument channels it would be in the TS and if it is not associated with the operability of the required instrument channel it does not add any value to the bases discussion and may cause confusion regarding the operability requirements of the required instrumentation. The general reference that all contacts will be tested at least once per refueling is deleted because the specific surveillance interval for any TS testing is provided in the associated surveillance and does not need to be repeated in every TADOT bases description. In addition, specific surveillance intervals for various TS required instrumentation may change due to TS changes resulting from engineering evaluations, PRA, or other reasons. These changes could result in surveillance intervals that exceed a refueling cycle. Therefore, it is not appropriate or necessary to make a general statement that all required contacts will be tested at least once per refueling. The applicable TS will continue to define the surveillance interval associated with any required instrumentation.

ITS 3.3.6 Containment Purge and Exhaust Isolation Instrumentation Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS 3.3.6 generic bases text is revised to be consistent with changes made to the associated specification (ITS 3.3.6) and to be consistent with the BVPS specific design. Changes made to the associated specification are described in more detail in the justifications provided for those changes. The proposed changes are necessary to accurately describe the corresponding BVPS system and its operation.
2. The ISTS generic safety analyses text is replaced with a description of the current Unit 2 analysis of record (UFSAR 15.4.7). The current fuel handling accident analysis and CTS requirements for moving recently irradiated fuel were approved by the NRC in Amendments 241 for Unit 1and 121 for Unit 2 (dated 8/30/01).
3. The ISTS generic text describing the LCO requirements is revised to be consistent with the proposed changes to the associated specification (ITS 3.3.6) and the BVPS specific design. Changes made to the associated specification are described in more detail in the justifications provided for those changes. The proposed changes include the elimination of references to ESFAS and SI and Phase A which are not part of the BVPS specific Purge and Exhaust Isolation System design. In addition, text was added to describe why the LCO is not applicable to BVPS Unit 1.
4. The ISTS 3.3.6 generic Applicability text is revised consistent with the BVPS specific design and safety analyses.
5. The ISTS 3.3.6 Action text is revised to delete descriptions and references that are more applicable to system designs that utilize ESFAS and the solid state protection system (SSPS) with trip setpoints and allowable values to accomplish Purge and Exhaust System isolation. This text is not directly applicable to the BVPS design and would be potentially confusing.
6. The ISTS 3.3.6 Action descriptions are revised to be consistent with changes made to the associated specification (ITS 3.3.6) and to be consistent with the BVPS specific design. Changes made to the associated specification are described in more detail in the justifications provided for those changes. The proposed changes are necessary to more accurately describe the BVPS system components being addressed by the Actions.
7. The standard Bases text describing the acceptable test of required relay contacts in the bases for a Channel Operational Test (COT) (or Trip Actuation Device Operational Test (TADOT)) is revised to refer to "any" required contacts and to delete references to non-TS testing and a specific surveillance interval. By replacing "the" with "any", the proposed change removes the implication that the applicable instrument channel always has required

relay contact(s). If the instrument channel for which the bases description applies has any required relay contacts, the discussion will still apply. This change will reduce the potential for confusion if a channel does not have relay contacts associated with it. In addition, the references to non-TS testing and a specific surveillance interval are removed. References to non-TS testing has no place in the TS. If such testing was required for the operability of the affected instrument channels it would be in the TS and if it is not associated with the operability of the required instrument channel it does not add any value to the bases discussion and may cause confusion regarding the operability requirements of the required instrumentation. The general reference that all contacts will be tested at least once per refueling is deleted because the specific surveillance interval for any TS testing is provided in the associated surveillance and does not need to be repeated in every COT (or TADOT) bases description. In addition, specific surveillance intervals for various TS required instrumentation may change due to TS changes resulting from engineering evaluations, PRA, or other reasons. These changes could result in surveillance intervals that exceed a refueling cycle. Therefore, it is not appropriate or necessary to make a general statement that all required contacts will be tested at least once per refueling. The applicable TS will continue to define the surveillance interval associated with any required instrumentation.

8. The ISTS 3.3.6 bases description of a TADOT surveillance is revised to more accurately reflect the BVPS manual switches being tested. The ISTS description of this surveillance includes information that is applicable to more complicated designs that utilize the SSPS Actuation relays (i.e., Master relays). The inclusion of this information does not accurately reflect the BVPS design that utilizes a manual switch for each valve and does not include SSPS functions. The proposed simplified BVPS bases description (test each valve switch and verify the valve cycles) is adequate to describe the required testing of the dedicated BVPS manual switches.

9. The ISTS 3.3.6 bases references are revised to include BVPS specific references consistent with the BVPS specific safety analyses and licensing bases.

ITS 3.3.7 Control Room Emergency Ventilation System (CREVS) Actuation Instrumentation Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS 3.3.7 generic Background and Safety Analysis bases text is revised to be consistent with the BVPS system design and applicable safety analyses. The proposed changes are necessary to accurately describe the corresponding BVPS system design, operation and safety analyses.
2. The ISTS 3.3.7 generic description of the manual initiation instrument Function is revised to be more consistent with the BVPS design. This includes the train orientation of the BVPS manual switches, the elimination of references to the Solid State Protection System actuation logic, and a description of the Unit 1 CREVS Fans and filter which are operated by individual manual controls that are different than the CREVS initiation instrumentation being addressed by ITS 3.3.7.
3. The ISTS Bases reference to Solid State Protection System Automatic Actuation Logic and Actuation Relays as a separate CREVS initiation function is deleted. Subsequent Functions are re-numbered accordingly. The BVPS CREVS radiation monitor and manual initiation Functions do not utilize the SSPS for actuation. The BVPS CIB instrumentation does utilize the SSPS for actuation of the CREVS but the requirements for this instrumentation (including all surveillances) are specified in ITS 3.3.2, ESFAS Instrumentation" as denoted on ITS Table 3.3.7-1. References to SI are changed to CIB consistent with the BVPS design. The portion of the ISTS bases text describing the applicable Actions if only the CREVS portion of the CIB is inoperable is consistent with the proposed ITS 3.3.2 Action "C" Bases text and is retained under the CIB Function description in the Bases for ITS 3.3.7. These changes result in consistent references between ITS 3.3.2 and ITS 3.3.7 and are necessary for a system description more consistent with the BVPS design.
4. The ISTS 3.3.7 Bases text is revised to incorporate changes that correspond to the changes made to the associated specification (ITS 3.3.7). The changes made to ITS 3.3.7 are justified in the discussions associated with each change made to the specification. These Bases changes are necessary to conform to the BVPS specific version of ITS 3.3.7.
5. The ISTS 3.3.6 Action text is revised to delete descriptions and references that are more applicable to system designs that utilize ESFAS and the solid state protection system (SSPS) with trip setpoints and allowable values to accomplish CREVS actuation. This text is not directly applicable to the BVPS design and would be potentially confusing.
6. Minor editorial changes for clarification. Not technical.
7. The standard Bases text describing the acceptable test of required relay contacts in the bases for a Channel Operational Test (COT) and Trip Actuation Device Operational Test (TADOT) are revised to refer to "any" required contacts and to delete references to non-TS testing and a specific surveillance interval. By replacing "the" with "any", the proposed change removes the implication that the applicable instrument channel always has required

relay contact(s). If the instrument channel for which the bases description applies has any required relay contacts, the discussion will still apply. In addition, the references to non-TS testing and a specific surveillance interval are removed. References to non-TS testing have no place in the TS. If such testing was required for the operability of the affected instrument channels it would be in the TS and if it is not associated with the operability of the required instrument channel it does not add any value to the bases discussion and may cause confusion regarding the operability requirements of the required instrumentation. The general reference that all contacts will be tested at least once per refueling is deleted because the specific surveillance interval for any TS testing is provided in the associated surveillance and does not need to be repeated in every COT and TADOT bases description. In addition, specific surveillance intervals for various TS required instrumentation may change due to TS changes resulting from engineering evaluations, PRA, or other reasons. These changes could result in surveillance intervals that exceed a refueling cycle. Therefore, it is not appropriate or necessary to make a general statement that all required contacts will be tested at least once per refueling. The applicable TS will continue to define the surveillance interval associated with any required instrumentation.

8. The ISTS SR 3.3.7.2 description of the bases for the surveillance frequency is revised to be consistent with the bases for the surveillance frequency of other radiation monitors in the ISTS. The proposed change provides a more accurate bases description for this surveillance that is consistent with the bases for the 92 day frequency described in other specifications with radiation monitors and recommended in NURG-1366.

9. The ISTS bases for the manual initiation function TADOT surveillance is revised to conform to the BVPS specific design of this instrumentation. References to the SSPS actuation logic and relays are removed and the surveillance is clarified regarding damper operation and fan start. The proposed change is necessary because the BVPS CREVS manual instrumentation does not utilize the SSPS circuitry to operate the CREVS valves and fans.

10. The ISTS 3.3.7 bases is revised to include the applicable BVPS references for the bases text.

ITS 3.3.8 Fuel Building Air Cleanup System (FBACS) Actuation Instrumentation Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. Section deleted. See JFD for the 3.3.8 Specification in Enclosure 1.

ITS 3.3.8 Boron Dilution Detection Instrumentation Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS Bases text is heavily modified to reflect the changes made to the associated specification and to incorporate the applicable information from the BVPS specific design and safety analyses. As described in the justification for changes made to the associated specification, ISTS 3.3.9, Boron Dilution Protection System is being replaced by the BVPS specific requirements for Boron Dilution Detection Instrumentation. The ISTS bases describes a two train system that actuates to mitigate a boron dilution accident (charging pump suction is transferred to the RWST upon a high flux signal. This system is not part of the BVPS design. The proposed BVPS ITS 3.3.8 (which replaces ISTS 3.3.9) incorporates source range neutron flux monitoring requirements previously contained within the Reactor Trip System Specification (CTS 3.3.1.1). As these BVPS source range indication requirements are not functions addressed by the ISTS Reactor Trip System Specification (3.3.1), the CTS requirements are moved to the functionally similar ISTS 3.3.9. The proposed change replaces an active two train mitigation system with the BVPS monitoring requirements and results in a substantial rewrite of the ISTS bases. See the justifications for the changes to the associated ISTS 3.3.9 LCO for additional information.
2. The allowance to use spare or alternate neutron detectors to meet the requirements of the LCO has already been reviewed and approved by the NRC for both BVPS Units 1 and 2 in Amendment # 217 (Unit 1) and # 94 (Unit 2) dated 8/26/98. The ITS Bases are modified by moving the information regarding spare detectors from the CTS and associated Bases.

ENCLOSURE 3

CHANGES TO THE CTS

CURRENT TECHNICAL SPECIFICATION (CTS) MARKUP
&
DISCUSSION OF CHANGES (DOCs)

Introduction

This enclosure contains the markup of the current BVPS Unit 2 Technical Specifications (TS), and where necessary to show a change to a BVPS Unit 1 TS that is not addressed by the associated Unit 2 markup and DOCs, a BVPS Unit 1 TS page is included. If a Unit 1 page is included it will be marked to show the change to the Unit 1 specific difference, and will not typically contain markups that repeat the applicable changes already addressed in the corresponding Unit 2 markup. Therefore, unless otherwise stated, each DOC applies to both Units 1 and 2 even though the change may only be marked on the Unit 2 TS.

The CTS is marked-up to show the changes necessary to convert to the Improved Standard Technical Specifications (ISTS) in NUREG-1431, Revision 2. The marked-up CTS result in the BVPS specific Improved Technical Specifications (ITS) contained in Enclosure 1.

Note: CTS markups in this section are presented in ITS order.

Due to the major revisions made to certain CTS in this section, the CTS markups are presented in ITS order. This is different from other conversion documentation sections. As the ITS does not contain a radiation monitoring TS, the markup of CTS 3.3.3.1, "Radiation Monitoring" for ITS 3.3.3 and 3.3.6 show the entire CTS 3.3.3.1 and serve as a roadmap for the contents of CTS 3.3.3.1. The new ITS number is marked at the top of the first page of each CTS and the disposition of each CTS and ISTS is summarized in the Table included at the beginning of Enclosure 1 for each TS Section.

The marked-up TS are followed by the applicable DOCs. Each technical change and more complex administrative change marked on the TS has a unique alpha-numeric designator that corresponds to a specific DOC. Due to the large number of format, editorial and presentation differences between the CTS and the new standard TS, not all of these changes are identified in the marked-up CTS pages. The single generic A.1 administrative change DOC designated on the first page of each marked-up CTS addresses all the marked and unmarked editorial, format, and presentation changes necessary to convert that entire CTS to the corresponding new standard TS. Only the more complex (less obvious) administrative type changes made to the CTS are identified with individual administrative DOCs (i.e., A.2, A.3, etc.).

The DOCs are grouped by the category of the change (i.e., less restrictive, more restrictive, administrative, etc). Each category of change is also associated with a No Significant Hazards Consideration (NSHC) for that change in Enclosure 4.

Certain categories of change also have a sub-category or change type associated with the DOC. The sub-category or change type is used to further group the CTS changes in more specific sub-categories that utilize a common NSHC or DOC.

Each CTS change marked as "Less Restrictive", with no subcategory identified in the associated DOC to reference a generic NSHC, will have a "Specific" NSHC included in Enclosure 4. A description of the categories and types of changes follows.

ENCLOSURE 3 (continued)

Categories and Types of Changes to the CTS

I. The major categories utilized to group changes to the CTS are as follows:

A - Administrative

L - Less Restrictive

M - More Restrictive

LA - Removed Detail (Sections of Tech Spec text removed from CTS)

R - Relocated (Entire Tech Spec requirement removed from CTS)

II. The subcategories of Less Restrictive "L" changes are as follows: (1)

1. Relaxation of LCO Requirements
2. Relaxation of Applicability
3. Relaxation of Completion Time
4. Relaxation of Required Action
5. Deletion of Surveillance Requirement
6. Relaxation of Surveillance Requirement Acceptance Criteria
7. Relaxation of Surveillance Frequency
8. Deletion of Reporting Requirement

III. The types of Removed Detail "LA" changes are as follows: (2)

1. Removing Details of System Design and System Description, Including Design Limits
2. Removing Descriptions of System Operation
3. Removing Procedural Details for Meeting Tech Spec Requirements and Related Reporting Requirements
4. Removing Administrative Requirements Redundant to Regulations
5. Removing Performance Requirements for Indication-Only Instruments and Alarms

(1) Each subcategory of Less Restrictive change is associated with a corresponding NSHC in Enclosure 4.

(2) The types of Removed Detail changes all share a common "LA" NSHC in Enclosure 4.

Rev. 1 to 2/28/05 submittal

ITS 3.3.3 Post Accident Monitoring

INSTRUMENTATION

Post

A1

ACCIDENT MONITORING INSTRUMENTATION

(PAM)

for each Function in Table 3.3.3-1

3.3.3

LIMITING CONDITION FOR OPERATION

A2

PAM

A3

~~3.3.3.8~~ The ~~accident monitoring~~ instrumentation ~~channels shown in Table 3.3-11~~ shall be OPERABLE.

NOTE
Separate Condition entry is allowed for each Function.

R1

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

One or more Functions with one required channel inoperable

L1

30

Relocated to LRM with Functions 4 & 5.

Cond. A

~~a.~~ ~~With the number of OPERABLE accident monitoring instrumentation channels less than the Total Number of Channels shown in Table 3.3-11, either~~ restore the inoperable channel(s) to OPERABLE status within ~~7~~ days ~~or be in at least HOT SHUTDOWN within the next 12 hours~~ ~~(follow Specification 3.4.11 when determining ACTIONS for Items 4 and 5).~~

L1

INSERT Cond. B

A10

all but one

A2

Cond. C - One or more Functions with two or more required channels inoperable

~~b.~~ ~~With the number of OPERABLE accident monitoring instrumentation channels less than the Minimum Channels OPERABLE requirements of Table 3.3-11, either~~ restore the inoperable channel~~(s)~~ to OPERABLE status within ~~48 hours or be in at least HOT SHUTDOWN within the next 12 hours.~~

L2

7 days

INSERT Conditions D, E, F

~~c. With the number of OPERABLE Reactor Coolant System Subcooling Margin Monitor instrumentation channels less than the Minimum Channels OPERABLE requirements of Table 3.3-11, either restore the inoperable channel(s) to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours.~~

L2

Relocated to LRM with U2 RCS subcooling monitor

R1

SURVEILLANCE REQUIREMENTS

~~4.3.3.8 Each accident monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-7.~~

INSERT (3) Separate ITS SRs - SR 3.3.3.1 - SR 3.3.3.2 - SR 3.3.3.3

INSERT ITS SR Note

A4

Rev. 1 to 2/28/05 submittal

INSERTS for ITS 3.3.3

Action Condition B

B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.6.5.	Immediately

Action Conditions D, E, & F

D. Required Action and associated Completion Time of Condition C not met.	D.1 Enter the Condition referenced in Table 3.3.3.1 for the Function.	Immediately
E. As required by Required Action D.1 and Referenced in Table 3.3.3-1.	E.1 Be in MODE 3. AND E.2 Be in MODE 4.	6 hours 12 hours
F. As required by Required Action D.1 and referenced in Table 3.3.3-1.	F.1 Initiate action in accordance with Specification 5.6.5.	Immediately

(3) ITS SRs

SR 3.3.3.1	Perform CHANNEL CHECK for each required instrumentation channel that is normally energized.	31 days
SR 3.3.3.2	NOTES 1. Neutron detectors are excluded from CHANNEL CALIBRATION. 2. Not applicable to the Penetration Flow Path Containment Isolation Valve Position Function. Perform CHANNEL CALIBRATION.	18 months
SR 3.3.3.3	-NOTE- Only applicable to the Penetration Flow Path Containment Isolation Valve Position Function. Perform TADOT.	18 months

ITS SR NOTE

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 as noted in SR 3.3.3.2.

ITS 3.3.3

Rev. 1 to 2/28/05 submittal

Post TABLE ~~3.3-11~~ 3.3.3-1

ACCIDENT MONITORING INSTRUMENTATION

CONDITION REFERENCED FROM REQUIRED ACTION D.1

A2 A5 FUNCTION REQUIRED CHANNELS A2 L3

~~INSTRUMENT~~		~~TOTAL NO. OF CHANNELS~~	~~MINIMUM CHANNELS OPERABLE~~	~~ACTION~~
~~1.~~ 11	Pressurizer Water Level	~~3~~ 2 (d)	~~2~~	~~a, b~~ E
~~2.~~ 18. a. b. c	~~Auxiliary Feedwater Flow Rate~~ Secondary Heat Sink Indication	2 ~~per steam generator~~	~~1 per steam generator~~	~~a, b~~
~~3.~~	~~Reactor Coolant System Subcooling Margin Monitor~~	~~2~~	~~1~~	~~c~~
~~4.~~	~~PORV Limit Switch Position Indicator~~	~~1/valve~~	~~0/valve~~	~~a, b~~
~~5.~~	~~PORV Block Valve Limit Switch Position Indicator~~	~~1/valve~~	~~0/valve~~	~~a, b~~
~~6.~~	~~Safety Valve Position Indicator~~	~~1/valve~~	~~0/valve~~	~~a, b~~
~~7.~~	~~Deleted~~ Relocated to LRM R1			
8.	Containment Sump Wide Range Water Level	2	~~1~~	~~a, b~~ E
9.	Containment Wide-Range Pressure	2	~~1~~	~~a, b~~ E
~~10.~~ 7	Reactor Vessel Level Indication System	2	~~1~~	~~a, b~~ L2 F
~~11.~~ 17. a, b, c, d	Core Exit Thermocouples	~~4/core quadrant~~ 2[(c)] A6	~~2/core quadrant~~	~~a, b~~ E

L4

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

L4

(d) The required channels may be satisfied by using any combination of SG Water Level (Narrow Range) channels and Auxiliary Feedwater Flow channels such that 2 channels are OPERABLE for each SG.

INSERT NEW PAM FUNCTIONS M1

Rev. 1 to 2/28/05 submittal

INSERTS for ITS 3.3.3
Table 3.3.3-1

NEW PAM FUNCTIONS

M1

	FUNCTION	REQUIRED CHANNELS	CONDITION REFERENCED FROM REQUIRED ACTION D.1
1.	Power Range Neutron Flux	2	E
2.	Intermediate Range Neutron Flux	2	E
3.	Source Range Neutron Flux	2	E
4.	Reactor Coolant System (RCS) Hot Leg Temperature (Wide Range)	2	E
5.	RCS Cold Leg Temperature (Wide Range)	2	E
6.	RCS Pressure (Wide Range)	2	E
10.	Containment Area Radiation (High Range)	2	F
12.	Steam Generator (SG) Water Level (Wide Range)	3	E
13.	SG Pressure		
	a) SG "A"	2	E
	b) SG "B"	2	E
	c) SG "C"	2	E
14.	Condensate Storage Tank Level	2	E
15.	Refueling Water Storage Tank Level (Wide Range)	2	E
16.	Penetration Flow Path Containment Isolation Valve Position	2 per penetration flow path(a)(b)	E
18.	Secondary Heat Sink Indication		
	a) SG "A"	2(d)	E
	b) SG "B"	2(d)	E
	c) SG "C"	2(d)	E
19.	High Head SI Automatic Injection Header Flow	1	N/A

(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.

ITS 3.3.3

Rev. 1 to 2/28/05 submittal

~~TABLE 4.3-7~~

~~ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS~~

A4 SR 3.3.3.2 SR 3.3.3.3

A4 SR 3.3.3.1

Secondary Heat Sink Indication

11 INSTRUMENT	~~CHANNEL CHECK~~	~~CHANNEL CALIBRATION~~
~~1.~~ 18. a, b, c Pressurizer Water Level	M	R
~~2. Auxiliary Feedwater Flow Rate~~ L4	~~S/U*~~ M	R
~~3. Reactor Coolant System Subcooling Margin Monitor~~	~~M~~	~~R~~
~~4. PORV Limit Switch Position Indicator~~	~~M~~	~~R~~
~~5. PORV Block Valve Limit Switch Position Indicator~~	~~M~~	~~R~~
~~6. Safety Valve Position Indicator~~	~~M~~	~~R~~
~~7. Deleted~~		
8. Containment Sump Wide-Range Water Level	M	R
9. Containment Wide-Range Pressure	~~N/A~~ M	R
7 ~~10~~. Reactor Vessel Level Indication System	M	R
~~11~~. 17. a, b, c, d Core Exit Thermocouples	M	R

M2 Relocated to LRM R1 M3

M2

~~* Channel check to be performed in conjunction with Surveillance Requirement 4.7.1.2.7 following an extended plant outage.~~

INSTRUMENTATION

3.3.3 Post Accident Monitoring (PAM) Instrumentation

~~3/4.3.3 MONITORING INSTRUMENTATION~~

~~RADIATION MONITORING~~

Note: This Markup addresses the movement of the U1 and U2 Containment Area Radiation Monitor Indication Function to ITS 3.3.3 (PAM) and the relocation of the requirements for the Containment Area Radiation Alarm Function to the LRM and the U2 Main Steam Discharge Radiation Monitors to the ODCM.

3.3.3-1

A1

PAM

LIMITING CONDITION FOR OPERATION

3.3.3~~.1~~ The ~~radiation monitoring~~ instrumentation ~~channels~~ shown in Table ~~3.3-6~~ shall be OPERABLE ~~with their alarm/trip setpoints within the specified limits.~~

All existing requirements Relocated with containment area Radiation Alarm Function and Main Steam Discharge Radiation Monitors to LRM or ODCM.

R2

APPLICABILITY: As shown in Table 3.3-6.

ACTION:

A.7

a. ~~With a radiation monitoring channel alarm/trip setpoint exceeding the value shown in Table 3.3-6, adjust the setpoint to within the limit within 4 hours or declare the channel inoperable.~~

b. ~~With one or more radiation monitoring channels inoperable, take the ACTION shown in Table 3.3-6.~~

M4

c. ~~The provisions of Specification 3.0.3 are not applicable.~~

SURVEILLANCE REQUIREMENTS

~~4.3.3.1~~ Each radiation monitoring instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and ~~CHANNEL FUNCTIONAL TEST~~ operations during the modes and at the frequencies shown in Table 4.3-3.

A.8

SR 3.3.3.1 & SR 3.3.3.2 (ITS 3.3.3 Channel Check and Channel Calibration for Containment Area Radiation Monitor PAM Indication)

Relocated for Alarm function of Containment Area Radiation Monitors and Main Steam Discharge Radiation Monitors.

R2

Rev. 1 to 2/28/05 submittal

ITS 3.3.3

A9 → Required Channels; Function

3.3.3-1, PAM Instrumentation

TABLE ~~3.3-6~~

~~RADIATION MONITORING INSTRUMENTATION~~

The alarm function of containment area radiation monitors relocated to the LRM with all associated requirements (i.e., LCO, Action, Applicability, Surveillance, setpoint, instrument ID #s, and instrument range).

~~INSTRUMENT~~	~~MINIMUM CHANNELS OPERABLE~~	APPLICABLE MODES	~~SETPOINT(3)~~	~~MEASUREMENT RANGE~~	~~ACTION~~
~~1. AREA MONITORS~~ Radiation (High Range)					
~~a. Deleted~~					
~~b.~~ 10 Containment Area (2RMR-RQ206 & 207)	2	1,2,3 ~~& 4~~	~~≤ 2.0 x 10⁴R/hr~~	~~1 to 10⁷ R/hr~~	~~35~~ ITS 3.3.3 Action Cond. A, B, C, D, F
~~c. Control Room Area (2RMC-RQ201 & 202)~~	~~2~~	~~1,2,3,4, and (4)~~	~~≤ 0.476 mR/hr~~	~~10^{-2} to 10^{3} mR/hr~~	~~46,47~~
~~2. PROCESS MONITORS~~					
~~a. Containment~~					
~~i. Gaseous Activity (Xe-133) RCS Leakage Detection (2RMR-RQ303B)~~	~~1~~	~~1,2,3 & 4~~	~~N/A~~	~~10^{-6} to 10^{-1} µCi/cc~~	~~20~~
~~ii. Particulate Activity (I-131) RCS Leakage Detection (2RMR-RQ303A)~~	~~1~~	~~1,2,3 & 4~~	~~N/A~~	~~10^{-10} to 10^{-5} µCi/cc~~	~~20~~
~~b. Deleted~~					

R2 → LRM

L5

Changes to this instrument are addressed in the markups and DOCs associated with ITS 3.3.7, Control Room Emergency Ventilation Isolation

Changes to these instruments are addressed in the markups and DOCs associated with ITS 3.4.15, RCS Leakage Detection

ITS 3.3.3

Rev. 1 to 2/28/05 submittal

Table 3.3.3-1, PAM Instrumentation

~~TABLE 3.3-6 (Continued)~~

~~RADIATION MONITORING INSTRUMENTATION~~

~~INSTRUMENT~~	~~MINIMUM CHANNELS OPERABLE~~	~~APPLICABLE MODES~~	~~SETPOINT (3)~~	~~MEASUREMENT RANGE~~	~~ACTION~~
2. PROCESS MONITORS (Continued)					
c. Noble Gas and Effluent Monitors					
i. Deleted					
~~ii. Containment Purge Exhaust (Xe-133) (2HVR-RQ104A & B)~~	~~2~~	~~(5)~~	~~$\leq 1.01 \times 10^{-3}$ µCi/cc~~	~~10^{-6} to 10^{-1} µCi/cc~~	~~22~~
iii. Main Steam Discharge (Kr-88) (2MSS-RQ101A,B & C)	1/SG	1,2,3&4	$\leq 3.9 \times 10^{-2}$ µCi/cc	10^{-2} to 10^{3} µCi/cc	35

Changes to this instrument are addressed in the markups and DOCs associated with ITS 3.3.6, Containment Purge and Exhaust Isolation

Relocated To the ODCM with all associated LCO, Applicability, Action, and Surveillance requirements.

R2

Rev. 1 to 2/28/05 submittal

ITS 3.3.3

~~TABLE 3.3-6 (Continued)~~

R2

~~TABLE NOTATIONS~~

~~(1) Not used.~~ Relocated (part of radiation monitor setpoint requirement)

Changes to this Note are addressed in the markups and DOCs associated with ITS 3.3.6, Containment Purge and Exhaust Isolation

~~(2) Not used.~~

~~(3)~~ Above background.

Changes to this Note are addressed in the markups and DOCs associated with ITS 3.3.7, Control Room Emergency Ventilation Isolation

(4) ~~During movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies.~~

(5) ~~During movement of recently irradiated fuel assemblies within the containment and during movement of fuel assemblies over recently irradiated fuel assemblies within the containment.~~

Changes to this Action are addressed in the markups and DOCs associated with ITS 3.4.15, RCS Leakage Detection

ACTION STATEMENTS

~~ACTION 20 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.6.1.~~

~~ACTION 21 - This Action is not used.~~

Changes to this Action are addressed in the markups and DOCs associated with ITS 3.3.6, Containment Purge and Exhaust Isolation

~~ACTION 22 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.9.~~

~~ACTION 35~~ - With the number of OPERABLE channels less than required by the Minimum Channels OPERABLE requirement, either restore the inoperable channel(s) to OPERABLE status within 72 hours, or:

(For Containment Area Radiation Indication) REPLACE WITH ITS 3.3.3 Action Conditions A, & C,

1) Initiate the preplanned alternate method of monitoring the appropriate parameter(s), and

L6

2) Return the channel to OPERABLE status within 30 days, or, explain in the next Annual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.

(For Containment Area Radiation Indication) REPLACE WITH ITS 3.3.3 Action Conditions B, D & F

Replace with ITS 5.6.5 which requires a report be submitted to the NRC within 14 days.

M5

Relocate Action 35 for Containment Rad. Alarm and Main Steam Discharge Monitors

R2

Rev. 1 to 2/28/05 submittal

ITS 3.3.3 INSERT

ITS 3.3.3 Actions Applicable to the Containment Area Radiation PAM Function

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 5.6.5.	Immediately
C.	One or more Functions with two or more required channels inoperable.	C.1	Restore all but one channel to OPERABLE status.	7 days
D.	Required Action and associated Completion Time of Condition C not met.	D.1	Enter the Condition referenced in Table 3.3.3.1 for the Function.	Immediately
F.	As required by Required Action D.1 and referenced in Table 3.3.3-1.	F.1	Initiate action in accordance with Specification 5.6.5.	Immediately

~~TABLE 3.3-6 (Continued)~~

~~ACTION STATEMENTS (Continued)~~

ACTION 46 - With the number of OPERABLE channels one less than required by the Minimum Channels OPERABLE requirement, either restore the inoperable channel to OPERABLE status within 7 days or close the control room series normal air intake and exhaust isolation dampers.

ACTION 47 - With no OPERABLE channels either restore one inoperable channel to OPERABLE status within 1 hour or close the control room series normal air intake and exhaust isolation dampers.

Changes to these Actions are addressed in the markups and DOCs associated with ITS 3.3.7, Control Room Emergency Ventilation Isolation

ITS 3.3.3

Rev. 1 to 2/28/05 submittal

A.8

TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

R2

Relocated to LRM for Containment Area Radiation Alarm Function

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
~~1. AREA MONITORS~~				
~~a. Deleted~~				
~~b.~~ Containment Area (2RMR-RQ206 & 207)	~~S~~ M	R	M	1, 2, 3, ~~4~~
c. Control Room Area (2RMC-RQ201 & 202)	S	R	M	1, 2, 3, 4, and ##
2. PROCESS MONITORS				
a. Containment				
i. Gaseous Activity RCS Leakage Detection (2RMR-RQ303B)	S	R#	M	1, 2, 3 & 4
ii. Particulate Activity RCS Leakage Detection (2RMR-RQ303A)	S	R#	M	1, 2, 3 & 4
~~b. Deleted~~				

PAM Function # 10

A9

Radiation (High Range)

R2

Relocated to LRM

SR 3.3.3.1

SR 3.3.3.2

L7

L5

Changes to this instrument are addressed in the markups and DOCs associated with ITS 3.3.7, Control Room Emergency Ventilation Isolation

Changes to these items are addressed in the markups and DOCs associated with ITS 3.4.15, RCS Leakage Detection

~~# Surveillance interval may be extended to the upcoming refueling outage if the interval between refueling outages is greater than 18 months.~~

~~## During movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies.~~

Changes to this note are addressed in the markups and DOCs associated with ITS 3.3.7, Control Room Emergency Ventilation Isolation

ITS 3.3.3

Rev. 1 to 2/28/05 submittal

TABLE 4.3-3 (Continued)

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
2. PROCESS MONITORS (Continued)				
c. Noble Gas Effluent Monitors				
i. Deleted				
ii. ~~Containment Purge Exhaust (2HVR-RQ104A & B)~~	~~S~~	~~R~~	~~M~~	~~###~~
iii. Main Steam Discharge (2MSS-RQ101A, B & C)	S	R	M	1, 2, 3 & 4

Changes to this instrument are addressed in the markups and DOCs associated with ITS 3.3.6, Containment Purge and Exhaust Isolation

R2

Relocated to the ODCM

Changes to this note are addressed in the markups and DOCs associated with ITS 3.3.6, Containment Purge and Exhaust Isolation

~~### During movement of recently irradiated fuel assemblies within the containment and during movement of fuel assemblies over recently irradiated fuel assemblies within the containment.~~

INSTRUMENTATION

ACCIDENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.8 The accident monitoring instrumentation channels shown in Table 3.3-11 shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

Changes to this Unit 1 material are addressed in the corresponding Unit 2 markups and DOCs

ACTION:

a. With the number of OPERABLE accident monitoring instrumentation channels less than the Total Number of Channels shown in Table 3.3-11, either restore the inoperable channel(s) to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours (follow Specification 3.4.11 when determining ACTIONS for Items 5 and 6).

b. With the number of OPERABLE accident monitoring instrumentation channels less than the Minimum Channels OPERABLE requirements of Table 3.3-11, either restore the inoperable channel(s) to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENTS

4.3.3.8 Each accident monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-7.

TABLE 3.3-11

ACCIDENT MONITORING INSTRUMENTATION

		TOTAL NO. OF CHANNELS	MINIMUM CHANNELS OPERABLE
1.	Pressurizer Water Level	3	2
~~2.~~	~~Auxiliary Feedwater Flow Rate~~	~~1 per steam generator~~ 2(d)	~~1 per steam generator~~
3.	~~Reactor~~ Coolant System Subcooling Margin Monitor	1	1
~~4.~~	~~Deleted~~		
5.	PORV Limit Switch Position Indicator	1/valve	0/valve
6.	PORV Block Valve Limit Switch Position Indicator	1/valve	0/valve
7.	Safety Valve Acoustical Detector Position Indicator	2/valve*	1/valve
~~8.~~	~~Deleted~~		
9.	Containment Sump Wide Range Water Level	2	1
10.	Containment Wide-Range Pressure	2	0
11.	In-Core Thermocouples (Core-Exit Thermocouples)	4/core quadrant	2/core quadrant
~~12.~~ 7	Reactor Vessel Level Indicating System	~~1~~ 2	~~1~~

PAM Function 18. a, b, c

Secondary Heat Sink Indication

L4

M6

L4

R2

(d) The required channels may be satisfied by using any combination of SG Water Level (Narrow Range) channels and Auxiliary Feedwater Flow channels such that 2 channels are OPERABLE for each SG.

* ~~One Detector Active, Second Detector Passive~~

Relocated to LRM with Item 7 above

Changes to this Unit 1 material are addressed in the corresponding Unit 2 markups and DOCs

TABLE 4.3-7

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

		CHANNEL CHECK	CHANNEL CALIBRATION
1.	Pressurizer Water Level	M	R
2.	Auxiliary Feedwater Flow Rate	S/U(1)	R
3.	Reactor Coolant System Subcooling Margin	M	R
4.	Deleted		
5.	PORV Limit Switch Position Indicator	M	R
6.	PORV Block Valve Limit Switch Position Indicator	M	R
7.	Safety Valve Acoustical Detector Position Indicator	M	R
8.	Deleted		
9.	Deleted		
10.	Containment Sump Wide-Range Water Level	M	R
11.	Containment Wide-Range Pressure	N/A	R
12.	In-Core Thermocouples (Core-Exit Thermocouples)	M	R
13.	Reactor Vessel Level Indicating System	M	R

Changes to this Unit 1 material are addressed in the corresponding Unit 2 markups and DOCs

(1) Channel check to be performed in conjunction with Surveillance Requirement 4.7.1.2.7 following an extended plant outage.

ITS 3.3.3

Rev. 1 to 2/28/05 submittal

3/4.3.3 MONITORING INSTRUMENTATION

UNIT 1 PAGE

RADIATION MONITORING

LIMITING CONDITION FOR OPERATION

3.3.3.1 The radiation monitoring instrumentation channels shown in Table 3.3-6 shall be OPERABLE with their alarm/trip setpoints within the specified limits.

APPLICABILITY: As shown in Table 3.3-6.

ACTION:

a. With a radiation monitoring channel alarm/trip setpoint exceeding the value shown in Table 3.3-6, adjust the setpoint to within the limit within 4 hours or declare the channel inoperable.

b. With one or more radiation monitoring channels inoperable, take the ACTION shown in Table 3.3-6.

c. The provisions of Specification 3.0.3 are not applicable.

Changes to this Unit 1 material are addressed in the corresponding Unit 2 markups and DOCs

SURVEILLANCE REQUIREMENTS

4.3.3.1 Each radiation monitoring instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations during the modes and at the frequencies shown in Table 4.3-3.

ITS 3.3.3

UNIT 1 PAGE

Rev. 1 to 2/28/05 submittal

TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	SETPOINT(3)	MEASUREMENT RANGE	ACTION
1. AREA MONITORS					
a. Deleted					
b. Containment					
i. Purge & Exhaust Isolation (RMVS 104 A & B)	2	(2)	$\leq 1.6 \times 10^3$ cpm	$10 - 10^6$ cpm	22
ii. Area (RM-RM-219 A&B)	2	1, 2, 3 & 4	$\leq 1.5 \times 10^4$ R/hr	$1 - 10^7$ R/hr	35
c. Control Room Isolation (RM-RM-218 A & B)	2	1,2,3,4 and (4)	$\leq .47$ mR/hr	$10^{-2} - 10^3$ mR/hr	41
2. PROCESS MONITORS					
a. Containment					
i. Gaseous Activity RCS Leakage Detection (RM 215B)	1	1, 2, 3 & 4	N/A	$10 - 10^6$ cpm	20
ii. Particulate Activity RCS Leakage Detection (RM 215A)	1	1,2,3 & 4	N/A	$10 - 10^6$ cpm	20
b. Deleted					

R2

U1 specific Setpoint & Range for the alarm function of the containment area radiation monitors relocated to the LRM with all associated requirements (i.e., LCO, Action, Applicability, Surveillance, setpoint, instrument ID #s, and instrument range).

Changes to this Unit 1 material are addressed in the corresponding Unit 2 markups and DOCs

U1 specific ID #s Relocated to LRM

R2

Changes to this Unit 1 material are addressed in the corresponding Unit 2 markups and DOCs

~~TABLE 3.3-6 (Continued)~~

~~TABLE NOTATIONS~~

(1) (Not used)

(2) During movement of recently irradiated fuel assemblies within the containment and during movement of fuel assemblies over recently irradiated fuel assemblies within the containment.

(3) Above background.

(4) During movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies.

Changes to this Unit 1 material are addressed in the corresponding Unit 2 markups and DOCs

ACTION 20 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.6.1.

ACTION 21 - This Action is not used.

ACTION 22 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.9.

ACTION 35 - With the number of OPERABLE channels less than required by the Minimum Channels OPERABLE requirement, either restore the inoperable Channel(s) to OPERABLE status within 72 hours, or:

a) Initiate the preplanned alternate method of monitoring the appropriate parameter(s), and

b) Return the channel to OPERABLE status within 30 days, or, explain in the next Annual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.

ACTION 41 - a) With the number of Unit 1 OPERABLE channels one less than the Minimum Channels OPERABLE requirement:

1. Verify the respective Unit 2 control room radiation monitor train is OPERABLE within 1 hour and at least once per 31 days.

Changes to these Actions are addressed in the markups and DOCs associated with ITS 3.3.7, Control Room Emergency Ventilation Isolation

ACTION 41 (Continued)

2. With the respective Unit 2 control room radiation monitor train inoperable, suspend all operations involving movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies within 1 hour and restore the Unit 1 control room radiation monitor to OPERABLE status within 7 days or isolate the control room from the outside atmosphere by closing all series air intake and exhaust isolation dampers, unless the respective Unit 2 control room radiation monitor train is restored to OPERABLE status within 7 days.

b) With no Unit 1 control room radiation monitors OPERABLE:

Changes to these Actions are addressed in the markups and DOCs associated with ITS 3.3.7, Control Room Emergency Ventilation Isolation

1. Verify both Unit 2 control room radiation monitors are OPERABLE within 1 hour and at least once per 31 days.

2. With either Unit 2 control room radiation monitor inoperable, suspend all operations involving movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies within 1 hour and restore the respective Unit 1 control room radiation monitor train to OPERABLE status within 7 days or isolate the control room from the outside atmosphere by closing all series air intake and exhaust isolation dampers, unless the respective Unit 2 control room radiation monitor train is restored to OPERABLE status within 7 days.

3. With no Unit 2 control room radiation monitors OPERABLE, immediately isolate the combined control room by closing all series air intake and exhaust isolation dampers and be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ITS 3.3.3

UNIT 1 PAGE

Rev. 1 to 2/28/05 submittal

DRAFT PAGE FROM UNIT 1 LAR # 325

~~TABLE 4.3-3~~

~~RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS~~

Changes to this Unit 1 material are addressed in the corresponding Unit 2 markups and DOCs

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. AREA MONITORS				
a. Deleted				
b. Containment				
i. Purge & Exhaust Isolation (RMVS 104 A & B)	S	R	M	**
ii. Area (RM-RM-219 A & B)	S	R	M	1,2,3,& 4
c. Control Room Isolation (RM-RM-218 A & B)	S	R	M###	1,2,3,4, and ##
2. PROCESS MONITORS				
a. Containment				
i. Gaseous Activity RCS Leakage Detection (RM 215B)	S	R#	M	1,2,3 & 4
ii. Particulate Activity RCS Leakage Detection (RM 215A)	S	R#	M	1,2,3 & 4
b. Deleted				

** During movement of recently irradiated fuel assemblies within the containment and during movement of fuel assemblies over recently irradiated fuel assemblies within the containment.

Surveillance interval may be extended to the upcoming refueling outage if the interval between refueling outages is greater than 18 months.

During movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies.

Control Room intake and exhaust isolation dampers are not actuated.

ITS 3.3.4 Remote Shutdown Instrumentation

INSTRUMENTATION

A1

LA1

ITS Bases

REMOTE SHUTDOWN INSTRUMENTATION

LCO 3.3.4 The Remote Shutdown System Functions shall be OPERABLE.

A2

LIMITING CONDITION FOR OPERATION

~~3.3.3.5 The remote~~ shutdown ~~monitoring instrumentation~~ channels ~~shown in Table 3.3-9 shall be OPERABLE~~ with readouts displayed external to the control room.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

NOTE: Separate Condition entry is allowed for each Function.

A4

~~With the number of OPERABLE remote shutdown monitoring channels less than required by Table 3.3-9, either:~~

a. Restore the inoperable ~~channel~~ to OPERABLE status within ~~7~~ days, or

30

Function

A3

One or more required Functions inoperable.

L1

b. Be in HOT SHUTDOWN within ~~the next~~ 12 hours.

MODE 3 within 6 hours and

M1

A6

SURVEILLANCE REQUIREMENTS

~~4.3.3.5 Each remote shutdown monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-6.~~

SR 3.3.4.1 Perform CHANNEL CHECK for each required indication instrumentation channel that is normally energized every 31 days.

M4

L3

SR 3.3.4.3 Verify each required control circuit and transfer switch is capable of performing the intended function every 36 months.

SR 3.3.4.2 **NOTE:** Neutron detectors are excluded from CHANNEL CALIBRATION. Perform CHANNEL CALIBRATION for each required indication instrumentation channel every 18 months.

A5

ITS 3.3.4 REMOTE SHUTDOWN INSTRUMENTATION

ITS Bases Table 3.3.4-1

LA2

Corresponding ITS Bases Table 3.3.4-1 Function Number.

TABLE 3.3-9

REMOTE SHUTDOWN PANEL MONITORING INSTRUMENTATION

ITS Function		INSTRUMENTS*	MINIMUM CHANNELS OPERABLE
	~~1.~~	~~Intermediate Range Nuclear Flux~~	~~1~~
	~~2.~~	~~Intermediate Range Startup Rate~~	~~1~~
1.a	~~3.~~	Source Range Nuclear Flux	1
	~~4.~~	~~Source Range Startup Rate~~	~~1~~
3.a	5.	Reactor Coolant Temperature - Hot Leg	1
3.b	6.	Reactor Coolant Temperature - Cold Leg	1
2.a	7.	Pressurizer Pressure or RCS Wide Range Pressure (Unit 2 only)	1
4.a	8.	Pressurizer Level	1
3.c	9.	Steam Generator Pressure	1/steam generator
3.d	10.	Steam Generator Level	1/steam generator
	~~11.~~	~~RHR Temperature - HX Outlet~~	~~1~~
3.e	12.	Auxiliary Feedwater Flow ~~Rate~~	1/steam generator

L4

L5

L4

Insert ITS Control Functions in new ITS Bases Table for Remote Shutdown Instrumentation

M4

LA2

ITS Bases Table 3.3.4-1

*Emergency Shutdown Panel

ITS 3.3.4 REMOTE SHUTDOWN INSTRUMENTATION

Replaced by ITS SR 3.3.4.1 and ITS SR 3.3.4.3

A6

~~TABLE 4.3-6~~

~~REMOTE SHUTDOWN MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS~~

	INSTRUMENTS*	CHANNEL CHECK	CHANNEL CALIBRATION
1.	~~Intermediate Range Nuclear Flux~~	~~M~~	~~N.A.~~
2.	~~Intermediate Range Startup Rate~~	~~M~~	~~N.A.~~
3.	Source Range Nuclear Flux ~~(2)~~	M ~~(4)~~	~~N.A.~~ 18 months
4.	~~Source Range Startup Rate (2)~~	~~M (4)~~	~~N.A.~~
5.	Reactor Coolant Temperature - Hot Leg	M	R
6.	Reactor Coolant Temperature - Cold Leg	M	R
7.	Pressurizer Pressure or RCS Wide Range Pressure (indication) (Unit 2 only)	M	R
8.	Pressurizer Level	M	R
9.	Steam Generator Pressure	M	R
10.	Steam Generator Level	M	R
11.	~~RHR Temperature - HX Outlet (3)~~	~~M~~	~~R~~
12.	Auxiliary Feedwater Flow ~~Rate~~	~~S/U (1)~~ M	R

L4 A5 L3 L5 L4

L3 SR 3.3.4.1 M3 SR 3.3.4.2

LA2 Bases

* Emergency Shutdown Panel

M3 A5

~~(1) Channel check to be performed in conjunction with Surveillance Requirement 4.7.1.2.7 following an extended plant outage.~~

~~(2) Operability required in accordance with Specification 3.3.1.1.~~

~~(3) Operability required in accordance with Specification 3.4.1.3.~~

~~(4) Below P-6.~~ L3

UNIT 1 PAGES

ITS 3.3.4 REMOTE SHUTDOWN INSTRUMENTATION

TABLE 4.3-6

REMOTE SHUTDOWN PANEL MONITORING INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

	INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION
1.	Intermediate Range Nuclear Flux	M	N.A.
2.	Intermediate Range Startup Rate	M	N.A.
3.	Source Range Nuclear Flux (1)	M (4)	N.A.
4.	Source Range Startup Rate (1)	M (4)	N.A.
5.	Reactor Coolant Temperature - Hot Leg	M	R
6.	Reactor Coolant Temperature - Cold Leg	M	R
7.	Pressurizer Pressur		R
8.	Pressurizer Level		R
9.	Steam Generator Pressure	M	R
10.	Steam Generator Level	M	R
11.	RHR Temperature - HX Outlet (3)	M ~~(5)~~	R
12.	Auxiliary Feedwater Flow Rate	S/U (2)	R

Note that changes to this portion of the Unit 1 TS are addressed in the markup of the Unit 2 TS.

L4

Notation

(1) Operability required in accordance with Specification 3.3.1.1.
(2) Channel check to be performed in conjunction with Surveillance Requirement 4.7.1.2.7 following an extended plant outage.
(3) Operability required in accordance with Specification 3.4.1.3.
(4) Below P-6.
~~(5) Channel check to be performed in conjunction with Surveillance Requirement 4.4.1.3.1.~~

(next page is 3/4 3-49)

ITS 3.3.4 REMOTE SHUTDOWN INSTRUMENTATION

Insert ITS Control Requirements in new ITS Bases Table 3.3.4.1 M4

Function/Instrumentation or Control Parameter	Required Number of CHANNEL(S) OR CONTROL(S)
1. Reactivity Control Function	
b. Boric Acid Transfer Pump (Control)	1
2. Reactor Coolant System (RCS) Pressure Function	
b. Pressurizer Heater (Control)	1
3. Decay Heat Removal via Steam Generators (SGs) Function	
f. Steam Generator Atmospheric Release Valve (Control) or Residual Heat Release Valve (control) (Unit 2 only)	1
g. AFW Pump (Control)	1
h. AFW Flow (Control)	1
4. RCS Inventory Function	
b. Charging Pump (Control)	1
c. Charging Flow (Control)	1
d. Letdown Flow (Control)	1
5. Support System Function	
a. Component Cooling Water Pump (control)	1
b. River Water Pump (control) (Unit 1 only)	1
c. Service Water Pump (control) (Unit 2 only)	1

New ITS 3.3.5 Loss of Power Diesel Generator Start and Bus Separation Instrumentation

Table 3.3.5-1 → ~~TABLE 3.3-3 (Continued)~~

~~ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION~~ A1

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	ALLOWABLE VALUE	APPLICABLE MODES	ACTION
5. TURBINE TRIP & FEEDWATER ISOLATION						
b. Steam Generator Water Level—High-High, P-14	3/loop	2/loop in any operating loop	2/loop in each operating loop	≤ 81.1% of narrow range instrument span	1, 2, 3	14
c. Safety Injection	See Item 1 above for all Safety Injection initiating functions and requirements.					

Note: These requirements remain part of the ESFAS specification and changes to these requirements are discussed and documented in the markup and DOCs associated with the ESFAS specification.

A4 → A · ITS 3.3.5 Applicability

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	ALLOWABLE VALUE	APPLICABLE MODES	ACTION
~~6.~~ LOSS OF ~~POWER~~ Voltage	Required Channels on ITS Table 3.3.5-1 (A2)			2962 V; 0.33 ± 0.03 seconds		Conditions B, C, & E
~~a.~~ 4.16kv Emergency Bus						
2 ~~1. Undervoltage (Trip Feed)~~ Bus Separation	2/4.16kv Bus	2/4.16kv Bus	2/4.16kv Bus	≥ ~~71.2% of rated Bus Voltage~~ with a 1 ± 0.1 second time delay	1, 2, 3, 4 (INSERT NEW MODE)	33 (L1)
1 ~~2. Undervoltage (Start Diesel)~~ Degraded Voltage	1/4.16kv Bus	1/4.16kv Bus	1/4kv Bus	≥ ~~71.2% of rated Bus Voltage~~, 20 cycles ± 2 cycles	1, 2, 3, 4	33 (M1) Conditions, D & E
3 ~~b.~~ 4.16kv Emergency Bus ~~(Degraded Voltage)~~ Bus Separation	2/4.16kv Bus	2/Bus	2/Bus	≥ ~~93.1% of rated Bus Voltage~~ with a 90 ± 5 second time delay	1, 2, 3, 4	34 (A4) Conditions B, C, & E

Moved to ITS 3.3.5 Table 3.3.5-1 ← A3

ITS 3.3.5 Bases ← LA1

3873 V

Allowable Values in Table 3.3.5-1

New ITS 3.3.5 Loss of Power Diesel Generator Start and Bus Separation Instrumentation

Rev. 1 to 2/28/05 submittal

A3 Moved to ITS 3.3.5 Table 3.3.5-1

TABLE ~~3.3-3~~ 3.3.5-1 (Continued)

INSERT NEW MODE M1

~~ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION~~

FUNCTIONAL UNIT	~~TOTAL NO. OF CHANNELS~~ Required (A2)	~~CHANNELS TO TRIP~~	~~MINIMUM CHANNELS OPERABLE~~	ALLOWABLE VALUE	APPLICABLE MODES	~~ACTION~~ Condition
~~6. LOSS OF POWER (Continued)~~						
~~e.~~ 4 480 Volt Emergency Bus ~~(Degraded Voltage)~~ Bus Separation	2/480v Bus Required Channels on ITS Table 3.3.5-1	2/Bus ITS 3.3.5 Bases	~~2/Bus~~	446.9V ≥ ~~93.1% of rated Bus Voltage~~ with a 90 ± 5 second time delay	1, 2, 3, 4	~~34~~ A Conditions B, C, & E

A2 LA1 A2 A2 A4

7. AUXILIARY FEEDWATER[(3)]						
a. Automatic Actuation Logic and Actuation Relays	2	1	2	N.A.	1, 2, 3	42
b. Steam Gen. Water Level-Low-Low						
1. Start Turbine Driven Pump	3/stm. gen.	2/stm. gen. any stm. gen.	2/stm. gen.	≥ 16% of narrow range instrument span	1, 2, 3	14
Driven Pumps		gen. any 2 stm. gen.	gen.	range instrument span		
c. Undervoltage-RCP (Start Turbine Driven Pump)	(3)-1/bus	2	2	≥ 71.2% of rated bus voltage	1, 2	14

(3) Manual initiation is included in Specification 3.7.1.2.

Note: These requirements remain part of the ESFAS specification and changes to these requirements are discussed and documented in the markup and DOCs associated with the ESFAS specification.

Note: Separate Condition Entry is allowed for each Function.

A11

~~TABLE 3.3-3 (Continued)~~

~~ACTION STATEMENTS~~

D.1 Restore inoperable channel to OPERABLE status within one hour.

L2

A5

~~ACTION 33~~ - ~~With the number of OPERABLE Channels one less than the Total Number of Channels,~~ the Emergency Diesel Generator associated with the 4kv Bus shall be declared inoperable and the ACTION Statements ~~for Specifications 3.8.1.1 or 3.8.1.2, as appropriate,~~ shall apply.

Cond. D

Cond. E

L3

6

L4

~~ACTION 34~~ - ~~a.~~ ~~With the number of OPERABLE channels one less than the Minimum Number of Channels, place the inoperable channel in the tripped condition within 1 hour;~~ otherwise, immediately enter the applicable ACTION statement(s) for the associated Emergency Diesel Generator made inoperable by the degraded voltage start instrumentation.

Insert Cond. B Note

A6 Cond. B

Cond. E

A7

~~b.~~ ~~With the number of OPERABLE channels two less than the Minimum Number of Channels, restore at least one of the two channels to OPERABLE status and place the other in the tripped condition within 1 hour;~~ otherwise, immediately enter the applicable ACTION statement(s) for the associated Emergency Diesel Generator made inoperable by the degraded voltage start instrumentation.

Cond. C

A8

Cond. E

~~ACTION 36 - The block of the automatic actuation logic introduced by a reset of safety injection shall be removed by resetting (closure) of the reactor trip breakers within one hour of an inadvertent initiation of safety injection providing that all trip input signals have reset due to stable plant conditions. Otherwise, the requirements of ACTION Statement 13 shall have been met.~~

~~ACTION 37 - (This ACTION is not used)~~

Note: These requirements remain part of the ESFAS specification and changes to these requirements are discussed and documented in the markup and DOCs associated with the ESFAS specification.

~~ACTIO[N] ... E, ...ed permissive annunciator window(s) (bistable status lights or computer checks) that the interlock is in its required state for the existing plant condition, or apply Specification 3.0.3.~~

~~ACTION 41 - With the number of OPERABLE Channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or declare the associated valve inoperable and take the ACTION required by Specification 3.7.1.5.~~

New ITS 3.3.5 Loss of Power Diesel Generator Start and Bus Separation Instrumentation

Rev. 1 to 2/28/05 submittal

A10

~~TABLE 4.3-2 (Continued)~~

~~ENGINEERING SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS~~

TADOT

A9

A10

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
6. LOSS OF POWER	SR 3.3.5.2	A10	SR 3.3.5.1	
a. 4.16kv Emergency Bus				
1. Undervoltage (Trip Feed)	N.A.	R	Q	1, 2, 3, 4
2. Undervoltage (Start Diesel)	N.A.	R	Q	1, 2, 3, 4
b. 4.16kv Emergency Bus (Degraded Voltage)	N.A.	R	Q	1, 2, 3, 4
c. 480v Emergency Bus (Degraded Voltage)	N.A.	R	Q	1, 2, 3, 4
7. AUXILIARY FEEDWATER[4]				
a. Automatic Actuation Logic and Actuation Relays			M[1]	1, 2, 3
b. Steam Level				
1. Start Turbine Driven Pump	S	R	Q	1, 2, 3
2. Start Motor Driven Pumps	S	R	Q	1, 2, 3

Note: Verification of setpoint not required

L5

A12

INSERT SR 3.3.5.3
ESFAS Response Time Surveillance
Test Requirement 4.3.2.1.3

Note: These requirements remain part of the ESFAS specification and changes to these requirements are discussed and documented in the markup and DOCs associated with the ESFAS specification.

(4) Manual initiation is included in Specification 3.7.1.2.

Rev. 1 to 2/28/05 submittal

UNIT 1 PAGES

3.3.5-1

TABLE ~~3.3-3 (Continued)~~

~~ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION~~

Changes to these Unit 1 requirements are addressed in the markups and DOCs associated with the corresponding Unit 2 requirements.

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	ALLOWABLE VALUE	APPLICABLE MODES	ACTION
6. LOSS OF POWER						
a. 4.16kv Emergency Bus Undervoltage						
1. Loss of Voltage (Trip Feed)	1/4.16kv Bus	1/4.16kv Bus	1/4kv Bus	≥ 2962 V ~~71.2% of rated bus voltage~~ with a 1 ± 0.1 second time delay	1, 2, 3, 4	33
2. Loss of Voltage (Start Diesel)	1/4.16kv Bus	1/4.16kv Bus	1/4kv Bus	≥ 2962 V ~~71.2% of rated bus voltage~~ with a < 0.9 second time delay (includes auxiliary relay times)	1, 2, 3, 4	33
b. 4.16kv Emergency Bus Undervoltage (Degraded Voltage)	2/4.16kv Bus	2/Bus	2/Bus	≥ 3885.4 V ~~93.4% of rated bus voltage~~ with a 90 ± 5 second time delay	1, 2, 3, 4	34
c. 480 volt Emergency Bus Undervoltage (Degraded Voltage)	2/480v Bus	2/Bus	2/Bus	≥ 448.3 V ~~93.4% of rated bus voltage~~ with a 90 ± 5 second time delay	1, 2, 3, 4	34

Changes to these Unit 1 requirements are addressed in the markups and DOCs associated with the corresponding Unit 2 requirements.

LA2

Bases

New ITS 3.3.5 Loss of Power Diesel Generator Start and Bus Separation Instrumentation

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one or more required channels inoperable.	A.1 Enter the applicable Condition(s) referenced in Table 3.3.5-1 for the affected channel(s).	Immediately
B. One or more Functions with one channel per bus inoperable.	B.1 ------------------------------ - NOTE - The inoperable channel may be bypassed for up to 4 hours for surveillance testing of other channels provided the corresponding instrument channels, electrical bus, and DG in the other train are OPERABLE. ------------------------------ Place channel in trip.	6 hours
C. One or more Functions with two channels per bus inoperable.	C.1 Restore one channel per bus to OPERABLE status.	1 hour
D. One or more Functions with one channel per bus inoperable.	D.1 Restore inoperable channel to OPERABLE status.	1 hour
E. Required Action and associated Completion Time not met.	E.1 Enter applicable Condition(s) and Required Action(s) for the associated DG made inoperable by LOP DG start or bus separation instrumentation.	Immediately

New Applicable Mode

M1

When associated DG is required OPERABLE by LCO 3.8.2, "AC Sources - Shutdown."

New Unit 2 ITS 3.3.6 Containment Purge and Exhaust Isolation Instrumentation

~~REFUELING OPERATIONS~~ Instrumentation

A1

CONTAINMENT PURGE AND EXHAUST ISOLATION ~~SYSTEM~~

A2 Instrumentation for each Function in Table 3.3.6-1

3.3.6 Applicable to Unit 2 only. A3

LIMITING CONDITION FOR OPERATION

~~3.9.9~~ The Containment Purge and Exhaust isolation ~~system~~ shall be OPERABLE.

APPLICABILITY: During movement of recently irradiated fuel assemblies within the containment, and

A4 A14

During movement of fuel assemblies over recently irradiated fuel assemblies within the containment.

immediately

ACTION: ITS Condition B Note: Separate Condition entry is allowed for each Function.

~~With the Containment Purge and Exhaust isolation system inoperable,~~ close each of the purge and exhaust penetrations providing direct access from the containment atmosphere to the outside atmosphere. ~~The provisions of Specification 3.0.3 are not applicable.~~

ITS Required Action B.1 M1 A5 A6 Insert ITS Required Action B.2

SURVEILLANCE REQUIREMENTS

~~4.9.9 The Containment Purge and Exhaust isolation system shall be demonstrated OPERABLE at least once per 7 days by verifying that containment Purge and Exhaust isolation occurs on manual initiation and on a high radiation signal from each of the containment radiation monitoring instrumentation channels and the isolation time for each system isolation valve is within limits.~~

L1

Changes to the CTS Surveillance requirements for automatic valve actuation and timing are addressed in ITS 3.9.3, Containment Penetrations. See Markup and DOC for Unit 2 CTS 4.9.9 in Section 3.9.

Table 3.3.6-1, Function 1, 1 required channel per valve

SR 3.3.6.3 TADOT for Manual Switch

A8 A2 A7

INSERT ITS Instrumentation Surveillance Requirements for radiation monitors SR 3.3.6.1 & SR 3.3.6.2 & SR 3.3.6.4

INSERT NEW ITS 3.3.6 ACTION CONDITION B

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more manual initiation channels inoperable. OR Two radiation monitoring channels inoperable. OR Required Action and associated Completion Time for Condition A not met.	B.1 Place and maintain containment purge and exhaust valves in closed position. OR B.2 Enter applicable Conditions and Required Actions of LCO 3.9.3, "Containment Penetrations," for containment purge and exhaust isolation valves made inoperable by isolation instrumentation.	Immediately Immediately

INSERT ITS 3.3.6 SURVEILLANCES

SURVEILLANCE		FREQUENCY
SR 3.3.6.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.6.2	Perform COT.	92 days
SR 3.3.6.3	---------- - NOTE - ---------- Verification of setpoint is not required. ------------------------------ Perform TADOT.	18 months
SR 3.3.6.4	Perform CHANNEL CALIBRATION.	18 months

New Unit 2 ITS 3.3.6 Containment Purge and Exhaust Isolation Instrumentation

INSTRUMENTATION

A1

~~3/4.3.3 MONITORING INSTRUMENTATION~~

~~RADIATION MONITORING~~

A9

The Containment Purge and Exhaust Isolation Instrumentation for each Function in Table 3.3.6-1 shall be OPERABLE.

LIMITING CONDITION FOR OPERATION

3.3.3.1 The ~~radiation monitoring~~ instrumentation ~~channels~~ shown in Table 3.3-6 shall be OPERABLE ~~with their alarm/trip~~ setpoints within the ~~specified limits~~.

APPLICABILITY: As shown in Table 3.3-6.

L2

One radiation monitor inoperable, restore to OPERABLE status within 4 hours.

ACTION:

ITS 3.3.6 Action A

~~a.~~ With a ~~radiation~~ monitoring channel alarm/~~trip~~ setpoint exceeding the value ~~shown in Table~~ 3.3-6, adjust the setpoint to within ~~the~~ limit within ~~4 hours~~ or declare the ~~channel~~ inoperable.

ITS 3.3.6 Action B

M2

~~b.~~ ~~With one or more radiation monitoring channels inoperable~~, take the ACTION shown in Table 3.3-6.

A10

~~c.~~ ~~The provisions of Specification 3.0.3 are not applicable.~~

Action A not met or two inoperable radiation monitor channels inoperable

L2

SURVEILLANCE REQUIREMENTS

4.3.3.1 ~~Each radiation~~ monitoring instrumentation ~~channel~~ shall be demonstrated OPERABLE by ~~the performance~~ of the CHANNEL CHECK, CHANNEL CALIBRATION ~~and CHANNEL~~ FUNCTIONAL ~~TEST~~ operations during the modes ~~and at the~~ frequencies shown in Table 4.3-3.

A11

ITS 3.3.6 Surveillance Requirements for radiation monitors
SR 3.3.6.1 & SR 3.3.6.2 & SR 3.3.6.4

New Unit 2 ITS 3.3.6 Containment Purge and Exhaust Isolation Instrumentation

Rev. 1 to 2/28/05 submittal

TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	SETPOINT(3)	MEASUREMENT RANGE	ACTION
1. AREA MONITORS					
a. Deleted					
b. Containment Area (2RMR-RQ206 & 207)	2	1,2,3 & 4	≤ 2.0 x 10^4R/hr	1 to 10^7 R/hr	35
c. Control Room Area (2RMC-RQ201 & 202)	2	1,2,3,4, and (4)	≤ 0.476 mR/hr	10^{-2} to 10^3 mR/hr	46,47
2. PROCESS MONITORS					
a. Containment					
i. Gaseous Activity (Xe-133)	1	1,2,3 & 4	N/A	10^{-6} to 10^{-1} µCi/cc	20
ii. Particulate Activity (I-131) RCS Leakage Detection (2RMR-RQ303A)	1	1,2,3 & 4	N/A	10^{-10} to 10^{-5} µCi/cc	20
~~b. Deleted~~					

Note: These portions of the requirements are addressed in ITS 3.3.3, PAM & ITS 3.3.7, Control Room Emergency Ventilation System (CREVS) Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.3.3 and ITS 3.3.7.

Note: These portions of the requirements are addressed in ITS 3.4.15, RCS Leakage Detection Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.4.15.

New ITS 3.3.6 Containment Purge and Exhaust Isolation Instrumentation

Rev. 1 to 2/28/05 submittal

~~TABLE 3.3-6 (Continued)~~ Table 3.3.6-1

~~RADIATION MONITORING INSTRUMENTATION~~ Containment Purge and Exhaust Isolation Instrumentation

INSTRUMENT	~~MINIMUM CHANNELS OPERABLE~~ A12 ITS Table 3.3.6-1 Required Channels	APPLICABLE MODES	SETPOINT (3) ITS Table 3.3.6-1 Trip Setpoint	MEASUREMENT RANGE	ACTION
2. PROCESS MONITORS (Continued)					
~~c. Noble Gas and Effluent Monitors~~					
~~i. Deleted~~ LA1					
~~ii.~~ Containment Purge Exhaust (Xe-133) (2HVR-RQ104A & B) ITS 3.3.6 Bases	2	(5) ITS 3.3.6 Applicability	≤1.01x10^{-3}µCi/cc ITS Table 3.3.6-1 setpoint	10^{-6} to 10^{-1} µCi/cc ITS 3.3.6 Bases LA1	22 ITS Action Condition B
~~iii. Main Steam Discharge (Kr-88) (2MSS-RQ101A, B & C)~~	~~1/SG~~	~~1,2,3&4~~	~~≤3.9x10^{-2}µCi/cc~~	~~10^{-2} to 10^{3} µCi/cc~~	~~35~~

Note: These portions of the requirements are addressed in ITS 3.3.3, PAM Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.3.3.

~~TABLE 3.3-6 (Continued)~~

Note: These portions of the requirements are addressed in ITS 3.3.7, Control Room Emergency Ventilation System (CREVS) Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.3.7.

TABLE NOTATIONS

(1) ~~Not used.~~

(2) ~~Not used.~~

Table 3.3.6-1 Trip Setpoint

(3) Above background.

(4) ~~During movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies.~~

(5) During movement of recently irradiated fuel assemblies within the containment and during movement of fuel assemblies over recently irradiated fuel assemblies within the containment.

ITS 3.3.6 Applicability

ACTION STATEMENTS

~~ACTION 20 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.6.1.~~

~~ACTION 21 - This Action is not used.~~

M2

A6

~~ACTION 22 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.9.~~

~~ACTION 35 - With the number of OPERABLE channels less than required by the Minimum Channels OPERABLE requirement, either restore the inoperable channel(s) to OPERABLE status within 72 hours, or:~~

~~1) Initiate the preplanned alternate method of monitoring the appropriate parameter(s), and~~

~~2) Return the channel to OPERABLE status within 30 days, or, explain in the next Annual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.~~

Note: These portions of the requirements are addressed in ITS 3.4.15, RCS Leakage Detection Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.4.15.

B.1 Place and maintain containment purge and exhaust valves in closed position immediately.

OR

B.2 Enter applicable Conditions and Required Actions of LCO 3.9.3, "Containment Penetrations," for containment purge and exhaust isolation valves made inoperable by isolation instrumentation immediately.

Note: These portions of the requirements are addressed in ITS 3.3.3, PAM Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.3.3.

New Unit 2 ITS 3.3.6 Containment Purge and Exhaust Isolation Instrumentation

TABLE 3.3-6 (Continued)

ACTION STATEMENTS (Continued)

ACTION 46 - With the number of OPERABLE channels one less than required by the Minimum Channels OPERABLE requirement, either restore the inoperable channel to OPERABLE

Note: These portions of the requirements are addressed in ITS 3.3.7, Control Room Emergency Ventilation System (CREVS) Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.3.7.

ACTION 47 - With no OPERABLE channels either restore one inoperable channel to OPERABLE status within 1 hour or close the control room series normal air intake and exhaust isolation dampers.

New Unit 2 ITS 3.3.6 Containment Purge and Exhaust Isolation Instrumentation

Rev. 1 to 2/28/05 submittal

TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. AREA MONITO				
a. Delete				
b. Containment Area (2RMR-RQ206 & 207)	S	R	M	1, 2, 3, 4
c. Control Room Area (2RMC-RQ201 & 202)	S	R	M	1, 2, 3, 4, and ##
2. PROCESS MONITORS				
a. Containment				
i. Gaseous Activity	S	R#	M	1, 2, 3 & 4
ii. Particulate Activity RCS Leakage Detection (2RMR-RQ303A)	S	R#	M	1, 2, 3 & 4
b. Deleted				

Note: These portions of the requirements are addressed in ITS 3.3.3, PAM & ITS 3.3.7, Control Room Emergency Ventilation System (CREVS) Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.3.3 & ITS 3.3.7.

Note: These portions of the requirements are addressed in ITS 3.4.15, RCS Leakage Detection Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.4.15.

\# Surveillance interval may be extended to the upcoming refueling outage if the interval between refueling outages is greater than 18 months.

\## During movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies.

Note: These portions of the requirements are addressed in ITS 3.3.7, Control Room Emergency Ventilation System (CREVS) Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.3.7.

New Unit 2 ITS 3.3.6 Containment Purge and Exhaust Isolation Instrumentation

Rev. 1 to 2/28/05 submittal

TABLE 4.3-3 (Continued)

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	~~CHANNEL FUNCTIONAL TEST~~ CHANNEL OPERATIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
2. ~~PROCESS MONITORS (Continued)~~				
~~c. Noble Gas Effluent Monitors~~	SR 3.3.6.1	SR 3.3.6.4	SR 3.3.6.2	A13
~~i. Deleted~~ ITS 3.3.6 Bases				
LA1 ii. Containment/ Purge Exhaust (2HVR-RQ104A & B)	~~S~~	~~R~~ Q L4	~~M~~	###
~~iii. Main Steam Discharge (2MSS-RQ101A, B & C)~~	~~S~~	~~R~~	~~M~~	~~1, 2, 3, & 4~~

Note: These portions of the requirements are addressed in ITS 3.3.3, PAM Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.3.3.

ITS 3.3.6 Applicability

During movement of recently irradiated fuel assemblies within the containment and during movement of fuel assemblies over recently irradiated fuel assemblies within the containment.

UNIT 1 PAGES

New ITS Unit 2 only LCO 3.3.6 Containment Purge and Exhaust Isolation Instrumentation

REFUELING OPERATIONS

CONTAINMENT PURGE AND EXHAUST ISOLATION SYSTEM

R1

LIMITING CONDITION FOR OPERATION

3.9.9 The Containment Purge and Exhaust isolation system shall be OPERABLE.

APPLICABILITY: During movement of recently irradiated fuel assemblies within the containment, and

During movement of fuel assemblies over recently irradiated fuel assemblies within the containment.

ACTION:

With the Containment Purge and Exhaust isolation system inoperable, close each of the purge and exhaust penetrations providing direct access from the containment atmosphere to the outside atmosphere. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.9 The Containment Purge and Exhaust isolation system shall be demonstrated OPERABLE at least once per 7 days by verifying that containment Purge and Exhaust isolation occurs on manual initiation and on a high-high radiation signal from each of the containment radiation monitoring instrumentation channels and the isolation time of each system isolation valve is within limits.

Unit 1 Licensing Requirements Manual (LRM)

UNIT 1 PAGE

New Unit 2 only ITS 3.3.6 Containment Purge and Exhaust Isolation Instrumentation

3/4.3.3 MONITORING INSTRUMENTATION

R1

RADIATION MONITORING

LIMITING CONDITION FOR OPERATION

3.3.3.1 The radiation monitoring instrumentation channels shown in Table 3.3-6 shall be OPERABLE with their alarm/trip setpoints within the specified limits.

APPLICABILITY: As shown in Table 3.3-6.

ACTION:

a. With a radiation monitoring channel alarm/trip setpoint exceeding the value shown in Table 3.3-6, adjust the setpoint to within the limit within 4 hours or declare the channel inoperable.

b. With one or more radiation monitoring channels inoperable, take the ACTION shown in Table 3.3-6.

c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.1 Each radiation monitoring instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations during the modes and at the frequencies shown in Table 4.3-3.

Unit 1 requirements for the Containment Purge and Exhaust Radiation Monitors are Relocated to the Unit 1 Licensing Requirements Manual (LRM).

New Unit 2 ITS 3.3.6 Containment Purge and Exhaust Isolation Instrumentation

UNIT 1 PAGE

A1

TABLE 3.3-6

Rev. 1 to 2/28/05 submittal

RADIATION MONITORING INSTRUMENTATION

Unit 1 Licensing Requirements Manual (LRM)

R1

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	SETPOINT(3)	MEASUREMENT RANGE	ACTION
1. AREA MONITORS					
a. Deleted					
b. Containment					
i. Purge & Exhaust Isolation (RMVS 104 A & B)	2	(2)	$\leq 1.6 \times 10^3$ cpm	$10 - 10^6$ cpm	22
~~ii Area (RM-RM-219 A&B)~~	~~2~~	~~1, 2, 3 & 4~~	~~$\leq 1.5 \times 10^4$R/hr~~	~~$1 - 10^7$ R/hr~~	~~35~~
~~c. Control Room Isolation (RM-RM-218 A & B)~~	~~2~~	~~1,2,3,4 and (4)~~	~~$\leq .47$ mR/hr~~	~~$10^{-2} - 10^3$ mR/hr~~	~~41~~
~~2. PROCESS MONITORS~~					
~~a. Containment~~					
~~ii. Particulate Activity RCS Leakage Detection (RM 215A)~~	~~1~~	~~1,2,3 & 4~~	~~N/A~~	~~$10 - 10^6$ cpm~~	~~20~~
b. Deleted					

Note: These portions of the requirements are addressed in ITS 3.4.15, RCS Leakage Detection Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.4.15.

Note: These portions of the requirements are addressed in ITS 3.3.3, PAM & ITS 3.3.7, Control Room Emergency Ventilation System (CREVS) Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.3.3 or ITS 3.3.7.

New Unit 2 ITS 3.3.6 Containment Purge and Exhaust Isolation Instrumentation

TABLE 3.3-6 (Continued)

Unit 1 Licensing Requirements Manual (LRM)

TABLE NOTATIONS

~~(1) (Not used)~~

(2) During movement of recently irradiated fuel assemblies within the containment and during movement of fuel assemblies over recently irradiated fuel assemblies within the containment.

R1

*

~~(3) Above background~~

~~(4) During movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies.~~

ACTION STATEMENTS

**

~~ACTION 20 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.6.1.~~

~~ACTION 21 - This Action is not used.~~

R1

ACTION 22 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.9.

~~ACTION 35 - With the number of OPERABLE channels less than required by the Minimum Channels OPERABLE requirement, either restore the inoperable channel(s) to OPERABLE status within 72 hours, or:~~

Note: These portions of the requirements are addressed in ITS 3.3.3, PAM Instrumentation, consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.3.3.

~~2) Return the channel to OPERABLE status within 30 days, or, explain in the next Annual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.~~

*

~~ACTION 41 - a) With the number of Unit 1 OPERABLE channels one less than the Minimum Channels OPERABLE requirement:~~

~~1. Verify the respective Unit 2 control room radiation monitor train is OPERABLE within 1 hour and at least once per 31 days.~~

* **Note: These portions of the requirements are addressed in ITS 3.3.7, Control Room Emergency Ventilation System (CREVS) Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.3.7.**

** Note: These portions of the requirements are addressed in ITS 3.4.15, RCS Leakage Detection Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.4.15.

TABLE 3.3-6 (Continued)

UNIT 1 PAGE

Rev. 1 to 2/28/05 submittal

Draft Page From Unit 1 LAR # 325

ACTION STATEMENTS

ACTION 41 (Continued)

2. With the respective Unit 2 control room radiation monitor train inoperable, suspend all operations involving movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies within 1 hour and restore the Unit 1 control room radiation monitor to OPERABLE status within 7 days or isolate the control room from the outside atmosphere by closing all series air intake and exhaust isolation dampers, unless the respective Unit 2 control room radiation monitor train is restored to OPERABLE status within 7 days.

b) With no Unit 1 control room radiation monitors OPERABLE:

Note: These portions of the requirements are addressed in ITS 3.3.7, Control Room Emergency Ventilation System (CREVS) Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.3.7.

2. With either Unit 2 control room radiation monitor inoperable, suspend all operations involving movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies within 1 hour and restore the respective Unit 1 control room radiation monitor train to OPERABLE status within 7 days or isolate the control room from the outside atmosphere by closing all series air intake and exhaust isolation dampers, unless the respective Unit 2 control room radiation monitor train is restored to OPERABLE status within 7 days.

3. With no Unit 2 control room radiation monitors OPERABLE, immediately isolate the combined control room by closing all series air intake and exhaust isolation dampers and be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

New Unit 2 ITS 3.3.6 Containment Purge and Exhaust Isolation Instrumentation

Rev. 1 to 2/28/05 submittal

Draft Page From Unit 1 LAR # 325

UNIT 1 PAGE

TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. AREA MONITORS				
~~a. Deleted~~				
b. Containment				
i. Purge & Exhaust Isolation (RMVS 104 A & B)	S	R	M	**
~~ii. Area (RM-RM-219 A & B)~~	S	R	M	1,2,3,& 4
c. Control Room Isolation (RM-RM-218 A & B)	S	R	M###	1,2,3,4, and ##
2. PROCESS MONITORS				
a. Containment				
ii. Particulate Activity RCS Leakage Detection (RM 215A)	S	R#	M	1,2,3 & 4
~~b. Deleted~~				

R1

Unit 1 Licensing Requirements Manual (LRM)

Note: These portions of the requirements are addressed in ITS 3.4.15, RCS Leakage Detection Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.4.15.

R1

Unit 1 Licensing Requirements Manual (LRM)

** During movement of recently irradiated fuel assemblies within the containment and during movement of fuel assemblies over recently irradiated fuel assemblies within the containment.

\# Surveillance interval may be extended to the upcoming refueling outage if the interval between refueling outages is greater than 18 months.

\## During movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies.

\### Control Room intake and exhaust isolation dampers are not actuated.

Note: These portions of the requirements are addressed in ITS 3.3.3 PAM & ITS 3.3.7, Control Room Emergency Ventilation System (CREVS) Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.3.3 or ITS 3.3.7.

New ITS 3.3.7 Control Room Emergency Ventilation System (CREVS) Actuation Instrumentation

INSTRUMENTATION

~~3/4.3.3 MONITORING INSTRUMENTATION~~

A1

The Control Room Emergency Ventilation System (CREVS) actuation instrumentation for each Function in Table 3.3.7-1 shall be OPERABLE.

~~RADIATION MONITORING~~

LIMITING CONDITION FOR OPERATION

3.3.3.1 The ~~radiation monitoring~~ instrumentation ~~channels~~ shown in Table 3.3-6 shall be OPERABLE ~~with their alarm/trip~~ setpoints within the ~~specified limits~~.

APPLICABILITY: ~~As shown in Table 3.3-6.~~

According to Table 3.3.7-1.

A2

Action Note: Separate Condition entry is allowed for each Function.

A5

ACTION:

M1

~~a.~~ With a ~~radiation~~ monitoring channel ~~alarm/trip~~ setpoint exceeding the value ~~shown in Table~~ 3.3-6, adjust the setpoint to ~~within the~~ limit within ~~4 hours~~ or declare the ~~channel~~ inoperable.

A3

~~b.~~ With one or more ~~radiation monitoring~~ channels inoperable, take the ~~ACTION shown~~ in Table 3.3-6.

A4

c. The ~~provisions of Specification~~ 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.1 ~~Each radiation~~ monitoring instrumentation ~~channel~~ shall be demonstrated OPERABLE by ~~the performance~~ of the CHANNEL CHECK, CHANNEL CALIBRATION ~~and CHANNEL~~ FUNCTIONAL ~~TEST~~ operations during the ~~modes and at~~ the frequencies shown in Table 4.3-3.

R1

Control room radiation monitor requirements for Modes 1-4 to LRM

Refer to Table 3.3.7-1 to determine which SRs apply for each CREVS Actuation Function.

A6

New ITS 3.3.7 Control Room Emergency Ventilation System (CREVS) Actuation Instrumentation

3.3.7-1

Rev. 1 to 2/28/05 submittal

TABLE ~~3.3-6~~

~~RADIATION MONITORING INSTRUMENTATION~~

ITS 3.3.7 Bases — LA1

ITS Table 3.3.7-1

Required — A7

INSTRUMENT	~~MINIMUM~~ CHANNELS ~~OPERABLE~~	APPLICABLE MODES	SETPOINT (3)	MEASUREMENT RANGE	ACTION
1. AREA MONITORS					
a. Deleted					
~~b. Containment Area~~	~~2~~	~~1,2,3 & 4~~	~~≤ 2.0 x 10^4 R/hr~~	~~1 to 10^7 R/hr~~	~~35~~
c. Control Room Area (2RMC-RQ201 & 202)	2	1,2,3,4, and (4)	≤ 0.476 mR/hr	10^{-2} to 10^{3} mR/hr	46,47
2. PROCESS MONITORS					
~~a. Containment~~					
~~i. Gaseous Activity (Xe-133)~~	~~1~~	~~1,2,3 & 4~~	~~N/A~~	~~10^{-6} to 10^{-1} µCi/cc~~	~~20~~
~~ii. Particulate Activity (I-131) RCS Leakage Detection (2RMR-RQ303A)~~	~~1~~	~~1,2,3 & 4~~	~~N/A~~	~~10^{-10} to 10^{-5} µCi/cc~~	~~20~~
~~b. Deleted~~					

R1 — LRM

R1

ITS Table 3.3.7-1

ITS 3.3.7 Bases — LA1

ITS Table 3.3.7-1

ITS 3.3.7 Bases — LA1

ITS 3.3.7 Actions A, B, and D

Note: These portions of the requirements are addressed in ITS 3.3.3, PAM Instrumentation, consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.3.3.

Note: These portions of the requirements are addressed in ITS 3.4.15, RCS Leakage Detection Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.4.15.

Rev. 1 to 2/28/05 submittal

New ITS 3.3.7 Control Room Emergency Ventilation System (CREVS) Actuation Instrumentation

~~TABLE 3.3-6 (Continued)~~

~~TABLE NOTATIONS~~

~~(1) Not used.~~

~~(2) Not used.~~

ITS Table 3.3.7-1

~~(3)~~ Above background.

~~(4)~~ (a) During movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies.

(5) During ~~movement~~ of recently irradiated fuel ~~assemblies~~ within the containment and ~~during movement~~ of fuel assemblies over recently ~~irradiated~~ fuel assemblies within ~~the containment~~.

R1

For Modes 1-4 only

ACTION STATEMENTS

ACTION ~~20~~ - With the number of channels OPERABLE ~~less~~ than required ~~by the~~ Minimum ~~Channels~~ OPERABLE requirement, comply ~~with the~~ ACTION ~~requirements~~ of Specification 3.4.6.1.

~~ACTION 21 - This Action is not used.~~

ACTION 22 - ~~With~~ the number of channels ~~OPERABLE~~ less than required by ~~the Minimum Channels~~ OPERABLE requirement, comply ~~with~~ the ACTION ~~requirements~~ of Specification 3.9.9.

ACTION 35 - With the number of OPERABLE channels less than required by the Minimum Channels OPERABLE requirement, either restore the inoperable channel(s) to OPERABLE status within 72 hours, or:

Note: These portions of the requirements are addressed in ITS 3.3.3, PAM Instrumentation, consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.3.3.

2) Return the channel to OPERABLE status within 30 days, or, explain in the next Annual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.

Note: These portions of the requirements are addressed in ITS 3.3.6, Containment Purge and Exhaust Isolation Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.3.6.

Note: These portions of the requirements are addressed in ITS 3.4.15, RCS Leakage Detection Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.4.15.

New ITS 3.3.7 Control Room Emergency Ventilation System (CREVS) Actuation Instrumentation

R1

For Modes 1-4 only

~~TABLE 3.3-6 (Continued)~~

ACTION STATEMENTS (Continued)

~~ACTION 46~~ - ~~With the number of OPERABLE channels one less than required by the Minimum Channels OPERABLE requirement, either restore the inoperable channel to OPERABLE status within 7 days or close the control room series normal air intake and exhaust isolation dampers.~~

~~ACTION 47~~ - ~~With no OPERABLE channels either restore one inoperable channel to OPERABLE status within 1 hour or close the control room series normal air intake and exhaust isolation dampers.~~

M2

ITS 3.3.7 Action Condition A
One or more Functions with one channel or train inoperable. **Place one CREVS train in emergency pressurization mode in 7 days.**

M3

ITS 3.3.7 Action Condition B
One or more Functions with two channels or two trains inoperable. Place one CREVS train in the emergency pressurization mode immediately. AND Enter applicable Conditions and Required Actions of LCO 3.7.10, "CREVS", for one CREVS train made inoperable by inoperable CREVS actuation instrumentation immediately.

M4

Insert ITS 3.3.7 Action Condition C
Required Action and associated Completion Time for Condition A or B not met in MODE 1, 2, 3, or 4. Be in MODE 3 in 6 hours. AND Be in MODE 5 in 36 hours.

Insert ITS 3.3.7 Action Condition D
Required Action and associated Completion Time for Condition A or B not met during movement of recently irradiated fuel assemblies, or during movement of fuel assemblies over recently irradiated fuel assemblies. Suspend movement of recently irradiated fuel assemblies immediately. AND Suspend movement of fuel assemblies over recently irradiated fuel assemblies immediately.

INSERT CREVS Manual Initiation Function Requirements M5

INSERT Containment Isolation – Phase B signal – Refer to LCO 3.3.2, ESFAS Instrumentation," Function 3.b for all initiation functions and requirements. M6

New ITS 3.3.7 Control Room Emergency Ventilation System (CREVS) Actuation Instrumentation

Rev. 1 to 2/28/05 submittal

ITS Table 3.3.7-1

~~TABLE 4.3-3~~

~~RADIATION MONITORING INSTRUMENTATION~~ SURVEILLANCE REQUIREMENTS

A8

Channel Operational Test

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	~~CHANNEL FUNCTIONAL TEST~~	MODES IN WHICH SURVEILLANCE REQUIRED
1. AREA MONITORS				
~~a. Deleted~~				
~~b. Containment Area (2RMR-RQ206 & 207)~~	~~S~~	~~R~~	~~M~~	~~1, 2, 3, 4~~
c. Control Room Area (2RMC-RQ201 & 202)	~~S~~ SR 3.3.7.1	~~R~~ SR 3.3.7.4	~~M~~ Q SR 3.3.7.2	~~1, 2, 3, 4,~~ and ##
2. PROCESS MONITORS				
a. Containment				
~~i. Gaseous Activity RCS Leakage Detection (2RMR-RQ303B)~~	~~S~~	~~R#~~	~~M~~	~~1, 2, 3 & 4~~
~~ii. Particulate Activity RCS Leakage Detection (2RMR-RQ303A)~~	~~S~~	~~R#~~	~~M~~	~~1, 2, 3 & 4~~
b. Deleted				

Note: These portions of the requirements are addressed in ITS 3.3.3, PAM Instrumentation, consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.3.3.

R1

LA1 ITS 3.3.7 Bases

L1

R1 LRM

ITS Table 3.3.7-1

M7 INSERT SR 3.3.7.3 TADOT every 18 months for Manual Actuation Instrumentation

~~# Surveillance interval may be extended to the upcoming refueling outage if the interval between refueling outages is greater than 18 months.~~

During movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies.

Note: These portions of the requirements are addressed in ITS 3.4.15, RCS Leakage Detection Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.4.15.

MANUAL INITIATION FUNCTION INSERT FROM ITS TABLE 3.3.7-1

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	TRIP SETPOINT
1. Manual	1, 2, 3, 4, (a)	2 Trains	SR 3.3.7.3	NA

(a) During movement of recently irradiated fuel assemblies, or during movement of fuel assemblies over recently irradiated fuel assemblies.

New ITS 3.3.7 Control Room Emergency Ventilation System (CREVS) Actuation Instrumentation

UNIT 1 PAGES

Rev. 1 to 2/28/05 submittal

TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION

Changes to these Unit 1 requirements are addressed in the corresponding Unit 2 markup

Note: These portions of the requirements are addressed in ITS 3.3.3 PAM or 3.3.6, Containment Purge and Exhaust Isolation Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.3.3 or ITS 3.3.6.

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	SETPOINT(3)	MEASUREMENT RANGE	ACTION
1. AREA MONITORS					
~~a. Deleted~~					
~~b. Containment~~					
~~i. Purge & Exhaust Isolation (RMVS 104 A & B)~~	~~2~~	~~(2)~~	~~≤ 1.6 x 10^3 cpm~~	~~10 - 10^6 cpm~~	~~22~~
~~ii. Area (RM-RM-219 A&B)~~	~~2~~	~~1,2,3, & 4~~	~~≤ 1.5 x 10^4 R/hr~~	~~1 - 10^7 R/hr~~	~~35~~
c. Control Room Isolation (RM-RM-218 A & B)	2	1,2,3,4 and (4)	≤ .47 mR/hr	10^{-2} - 10^3 mR/hr	41
2. PROCESS MONITORS					
~~a. Containment~~					
~~i. Gaseous Activity RCS Leakage Detection~~	~~1~~	~~1,2,3 & 4~~	~~N/A~~	~~10 - 10^6 cpm~~	~~20~~
~~ii ... RCS Leakage Detection (RM 215A)~~				~~...n~~	~~20~~
b. Deleted					

ITS 3.3.7 Bases

LA1

ITS 3.3.7 Actions A, B, and D

Note: These portions of the requirements are addressed in ITS 3.4.15, RCS Leakage Detection Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.4.15.

Changes to these Unit 1 requirements are addressed in the corresponding Unit 2 markup

~~TABLE 3.3-6 (Continued)~~

Note: These portions of the requirements are addressed in ITS 3.3.6, Containment Purge and Exhaust Isolation Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.3.6.

~~(1) (Not used)~~

(2) During movement of recently irradiated fuel assemblies within the containment and during movement of fuel assemblies over recently irradiated fuel assemblies within the containment.

~~(3) Above background.~~

~~(4)~~ During movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies.

ITS 3.3.7 Applicability

ACTION STATEMENTS

ACTION 20 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.6.1.

~~ACTION 21 - This Action is not used.~~

ACTION 22 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.9.

ACTION 35 - With the number of OPERABLE channels less than required by the Minimum Channels OPERABLE requirement, either restore the inoperable channel(s) to OPERABLE

Note: These portions of the requirements are addressed in ITS 3.3.3, PAM Instrumentation, consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.3.3.

monitoring the appropriate parameter(s), and

2) Return the channel to OPERABLE status within 30 days, or, explain in the next Annual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.

~~ACTION 41~~ - ~~a)~~ With the number of Unit 1 OPERABLE channels one less than the Minimum Channels OPERABLE requirement:

1. Verify the respective Unit 2 control room radiation monitor train is OPERABLE within 1 hour and at least once per 31 days.

Action Condition A

For Fuel Movement

R1

For Modes 1-4 only

M8

Note: These portions of the requirements are addressed in ITS 3.4.15, RCS Leakage Detection Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.4.15.

New ITS 3.3.7 Control Room Emergency Ventilation System (CREVS) Actuation Instrumentation

UNIT 1 PAGE

~~TABLE 3.3-6 (Continued)~~

Draft Page From Unit 1 LAR # 325

~~ACTION STATEMENTS~~

ACTION 41 (Continued)

M9 L3 7 days M8

For Fuel Movement → Action Condition A & D

~~2.~~ With the respective Unit 2 control room radiation monitor train inoperable, suspend all operations involving movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies within ~~1 hour~~ and restore the Unit 1 control room radiation monitor to OPERABLE status within 7 days or isolate the control room from the outside atmosphere by closing all series air intake and exhaust isolation dampers, unless the respective Unit 2 control room radiation monitor train is restored to OPERABLE status within 7 days.

For Modes 1-4 only → R1

~~b)~~ With no Unit 1 control room radiation monitors OPERABLE:

L3 7 days

For Fuel Movement → Action Condition A & D

1. Verify both Unit 2 control room radiation monitors are OPERABLE within 1 hour and at least once per 31 days.

2. With either Unit 2 control room radiation monitor inoperable, suspend all operations involving movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies within ~~1 hour~~ and restore the respective Unit 1 control room radiation monitor train to OPERABLE status within 7 days or isolate the control room from the outside atmosphere by closing all series air intake and exhaust isolation dampers, unless the respective Unit 2 control room radiation monitor train is restored to OPERABLE status within 7 days.

M9 M8

For Fuel Movement → Action Condition B & C

~~3.~~ With no Unit 2 control room radiation monitors OPERABLE, immediately isolate the combined control room by closing all series air intake and exhaust isolation dampers and be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

R1 For Modes 1-4 only M9 M8

New ITS 3.3.7 Control Room Emergency Ventilation System (CREVS) Actuation Instrumentation

Draft Page From Unit 1 LAR # 325

Rev. 1 to 2/28/05 submittal

UNIT 1 PAGE

~~TABLE 4.3-3~~

~~RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS~~

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. AREA MONITORS				
~~a. Deleted~~				
~~(RMVS 104 A & B)~~				
~~ii. Area (RM-RM-219 A & B)~~	~~S~~	~~R~~	~~M~~	~~1,2,3,&4~~
c. Control Room Isolation (RM-RM-218 A & B)	S	R	M###	1,2,3,4, and ##
2. PROCESS MONITORS				
~~a. Containment~~				
~~ii. Particulate Activity RCS Leakage Detection (RM 215A)~~	~~S~~	~~R#~~	~~M~~	~~1,2,3 & 4~~
~~b. Deleted~~				

Note: These portions of the requirements are addressed in ITS 3.3.3, PAM Instrumentation, consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.3.3.

Note: These portions of the requirements are addressed in ITS 3.3.6, Containment Purge and Exhaust Isolation Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.3.6.

Note: These portions of the requirements are addressed in ITS 3.4.15, RCS Leakage Detection Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.4.15.

~~** During movement of recently irradiated fuel assemblies within the containment and during movement of fuel assemblies over recently irradiated fuel assemblies within the containment.~~

~~# Surveillance interval may be extended to the upcoming refueling outage if the interval between refueling outages is greater than 18 months.~~

During movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies.

~~### Control Room intake and exhaust isolation dampers are not actuated.~~ A9

Changes to these Unit 1 ITS 3.3.7 requirements are addressed in the corresponding Unit 2 markup

Note: These portions of the requirements are addressed in ITS 3.3.6, Containment Purge and Exhaust Isolation Instrumentation consistent with the location of this information in the ISTS. All changes to these portions of the requirements will be discussed and documented in the markups and DOCs associated with ITS 3.3.6.

INSERT ITS 3.3.7 Actions

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more Functions with one channel or train inoperable.	A.1	Place one CREVS train in emergency pressurization mode.	7 days
B. One or more Functions with two channels or two trains inoperable.	B.1	Place one CREVS train in emergency pressurization mode.	Immediately
	AND		
	B.2	Enter applicable Conditions and Required Actions of LCO 3.7.10, "CREVS", for one CREVS train made inoperable by inoperable CREVS actuation instrumentation.	Immediately
C. Required Action and associated Completion Time for Condition A or B not met in MODE 1, 2, 3, or 4.	C.1	Be in MODE 3.	6 hours
	AND		
	C.2	Be in MODE 5.	36 hours
D. Required Action and associated Completion Time for Condition A or B not met during movement of recently irradiated fuel assemblies or movement of fuel assemblies over recently irradiated fuel assemblies.	D.1	Suspend movement of recently irradiated fuel assemblies.	Immediately
	AND		
	D.2	Suspend movement of fuel assemblies over recently irradiated fuel assemblies.	Immediately

New ITS 3.3.8 Boron Dilution Detection Instrumentation

A1

TABLE 3.3-1
REACTOR TRIP SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	ALLOWABLE VALUE	APPLICABLE MODES	ACTION
1. Manual Reactor Trip	2	1	2	N.A.	1, 2, 3[1], 4[1] and 5[1]	12
2. Power Range, Neutron Flux						
3. Power Range, Neutron Flux High Positive Rate	4	2	3	≤ 5.5% of RTP* with a time constant ≥ 2 seconds	1, 2	2
4. Power Range, Neutron Flux High Negative Rate	4	2	3	≤ 5.5% of RTP* with a time constant ≥ 2 seconds	1,2	2
5. Intermediate Range, Neutron Flux	2	1	2	≤ 27.9% of RTP*	1[1], 2, 3[1], 4[1] and 5[1]	3
6. Source Range(8), Neutron Flux						
a. With Rod Withdrawal Capability	2	1	2	~~≤ 1.3 x 10⁵ cps~~	2[1], 3[1], 4[1] and 5[1]	4
~~b.~~ With All Rods Fully Inserted and Without Rod Withdrawal Capability	2	~~0~~	1	N.A.	3(9), 4(9), and 5(9)	5

Note: Changes to these requirements are addressed in the documentation and markups associated with the Reactor Trip System Technical Specification (ITS 3.3.1). These requirements are not part of ITS 3.3.8.

LA1 A2 A3

ITS 3.3.8 Condition A

ITS 3.3.8 Bases

ITS 3.3.8 Applicability

ITS 3.3.8 LCO

ITS 3.3.8 Applicability

A4 LA2

ITS 3.3.8 Bases

* = RATED THERMAL POWER

(8) Alternate detectors may only be used for monitoring purposes Without Rod Withdrawal Capability ~~until detector functions are modified to permit equivalent alarm and trip functions.~~

Note: Changes to these requirements are addressed in the documentation and markups associated with the *Reactor Trip System Technical Specification* (ITS 3.3.1). These requirements are not part of ITS 3.3.8.

TABLE 3.3-1 (Continued)

TABLE NOTATION

(1

(2

Note: Changes to these requirements are addressed in the documentation and markups associated with the Reactor Trip System Technical Specification (ITS 3.3.1). These requirements are not part of ITS 3.3.8.

(3) With the reactor trip system breakers in the closed position and the control rod drive system capable of rod withdrawal.

(9) In this condition, source range Function does not provide reactor trip but does provide indication.

ITS 3.3.8 Bases

LA3

(A): OVERTEMPERATURE ΔT

The Overtemperature ΔT Function Allowable Value shall not exceed the following nominal trip setpoint by more than 0.5% ΔT span for the ΔT channel, 0.5% ΔT span for the T_{avg} channel, 0.5% ΔT span for the Pressurizer Pressure channel and 0.5% ΔT span for the f(ΔI) channel.

$$\Delta T \frac{(1+\tau_1 S)}{(1+\tau_2 S)}\left(\frac{1}{1+\tau_3 S}\right) \le \Delta T_0 \left\{K_1 - K_2 \frac{(1+\tau_4 S)}{(1+\tau_5 S)}\left[T\left(\frac{1}{1+\tau_6 S}\right) - T'\right] + K_3(P-P') - f_1(\Delta I)\right\}$$

where: ΔT is measured RCS ΔT, °F.

$\frac{1+\tau_1 S}{1+\tau_2 S}$ is the function generated by the lead-lag compensator on measured ΔT.

τ_1, τ_2 are the time constants utilized in the lead-lag

Note: Changes to these requirements are addressed in the documentation and markups associated with the Reactor Trip System Technical Specification (ITS 3.3.1). These requirements are not part of ITS 3.3.8.

τ_3 Is the time constant utilized in the lag compensator for ΔT specified in the COLR.

ΔT_0 Is the loop specific indicated ΔT at RATED THERMAL POWER, °F.

K_1 is specified in the COLR.

K_2 is specified in the COLR.

$\frac{1+\tau_4 S}{1+\tau_5 S}$ is the function generated by the lead-lag compensator for T_{avg}.

τ_4, τ_5 are the time constants utilized in lead-lag compensator for T_{avg} specified in the COLR.

TABLE 3.3-1 (Continued)

ACTION 3 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement and with the THERMAL POWER level:

a. Below P-6, restore the inoperable channel to OPERABLE status prior to increasing THERMAL POWER above the P-6 setpoint.

b. Above P-6 but below 5 percent of RATED THERMAL POWER, restore the inoperable channel to OPERABLE status prior to increasing THERMAL POWER above 5

Note: Changes to these requirements are addressed in the documentation and markups associated with the Reactor Trip System Technical Specification (ITS 3.3.1). These requirements are not part of ITS 3.3.8.

ACTION 4 - a. MODE 2 (Below P-6); with one source range neutron flux channel inoperable, immediately suspend operations involving positive reactivity additions.

b. MODE 3, 4 and 5; with one source range neutron flux channel inoperable, restore the inoperable channel to OPERABLE status within 48 hours or open the reactor trip breakers within the next hour.

A5

A.2.1 Restore inoperable channel to OPERABLE status within 1 hour.
OR

A6

Required channel inoperable.

ODE 2 (... with two source range ... inoperable, immediately open the reactor trip breakers.

~~ACTION 5~~ - ~~With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement:~~

ITS 3.3.8 Condition A

~~a.~~ Suspend operations involving positive reactivity additions(7) and Immediately M1

~~b.~~ ~~Close unborated water source isolation valves (2CHS-91, 2CHS-96 and 2CHS-138) or (2CHS-37 and 2CHS-82S)~~ within 1 hour, and

ITS 3.1.8 Bases LA4

SR 3.1.1.1 A7

~~c.~~ Perform ~~Surveillance Requirement 4.1.1.1.1 or 4.1.1.2, as applicable,~~ within the next hour and at least once per 12 hours thereafter.

~~ACTION 6 - This Action is not used.~~

ITS Required Action A Note

~~(7)~~ Plant ~~cooldown is~~ temperature changes are allowable provided the temperature change is accounted for in the calculated shutdown margin. L1

Note: Changes to these requirements are addressed in the documentation and markups associated with the Reactor Trip System Technical Specification (ITS 3.3.1). These requirements are not part of ITS 3.3.8.

New ITS 3.3.8 Boron Dilution Detection Instrumentation

TABLE 4.3-1

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Functional Unit	Channel Check	Channel Calibration	Channel Functional Test	Modes in Which Surveillance Required
1. Manual Reactor Trip	N.A.	N.A.	S/U[1], R[10]	1, 2, 3[14], 4[14], 5[14]
2. Power Range, Neutron Flux				
a. High				1, 2
b. Low				1[7], 2
3. Power Ra... High Positive Rate				1, 2
4. Power Range, Neutron Flux, High Negative Rate	N.A.	R[6]	Q	1, 2
5. Intermediate Range, Neutron Flux	S	R[6]	S/U[1]	1, 2, 3[14], 4[14], 5[14]
6. Source Range[15], Neutron Flux				
a. With Rod Withdrawal Capability	S	R[6]	Q[8]	2, 3[14], 4[14] and 5[14]
~~b.~~ With All Rods Inserted and Without Rod Withdrawal Capability	S	R~~(6)~~	Q~~(8)~~	3, 4 and 5
7. Overtemperature ΔT		R[6]	Q	1, 2
8. Overpower ΔT			Q	1, 2
9. Pressurizer Pressure-Low (Above P-7)	S	R	Q	1, 2
10. Pressurizer Pressure-High	S	R	Q	1, 2
11. Pressurizer Water Level-High (Above P-7)	S	R	Q	1, 2

Note: Changes to these requirements are addressed in the documentation and markups associated with the Reactor Trip System Technical Specification (ITS 3.3.1). These requirements are not part of ITS 3.3.8.

ITS SR 3.3.8.1

ITS SR 3.3.8.2

L2

A8

ITS 3.3.8 Applicability

ITS 3.3.8 Applicability

Note: Changes to these requirements are addressed in the documentation and markups associated with the Reactor Trip System Technical Specification (ITS 3.3.1). These requirements are not part of ITS 3.3.8.

New ITS 3.3.8 Boron Dilution Detection Instrumentation

TABLE 4.3-1 (Continued)

TABLE NOTATION

~~(1) - If not performed in previous 31 days.~~

Note: Changes to these requirements are addressed in the documentation and markups associated with the Reactor Trip System Technical Specification (ITS 3.3.1). These requirements are not part of ITS 3.3.8.

~~(2 ... R.~~

~~(3 ... compare ... f RATED THERMAL POWER. Recalibrate if absolute difference greater than or equal to 3 percent.~~

~~(4) - (Not Used).~~

~~(5) - Each train tested every other month on a STAGGERED TEST BASIS.~~

(6) - Neutron detectors may be excluded from CHANNEL CALIBRATION.

Note in ITS SR 3.3.8.2

~~(7) - Below P-10.~~

(8) - ~~Below P-6, not~~ required to be ~~performed for~~ source range instrumentation ~~prior to entering~~ MODE 3 from MODE 2 until 12 hours after entry into MODE 3.

L2

~~(9) - (Not Used)~~

~~(10) - The CHANNEL FUNCTIONAL TEST shall independently verify the OPERABILITY of the undervoltage and shunt trip circuits for the Manual Reactor Trip Function. The test shall also verify the OPERABILITY of the Bypass Breaker trip circuit(s).~~

Note: Changes to these requirements are addressed in the documentation and markups associated with the Reactor Trip System Technical Specification (ITS 3.3.1). These requirements are not part of ITS 3.3.8.

~~... the ... of~~

~~(12) - Local manual shunt trip prior to placing breaker in service.~~

~~(13) - Automatic undervoltage trip.~~

~~(14) - With the reactor trip system breakers closed and the control rod drive system capable of rod withdrawal.~~

~~(15)~~ - Surveillance Requirements need not be performed on alternate detectors until connected and required for OPERABILITY.

ITS 3.3.8 Bases

LA5

TABLE 3.3-1 (Continued)

ACTION 3 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement and with the THERMAL POWER level:

a. Below P-6, restore the inoperable channel to OPERABLE status prior to increasing THERMAL POWER above the P-6 setpoint.

b. Above P-6 but below 5 percent of RATED THERMAL POWER, restore the inoperable channel to OPERABLE status prior to increasing THERMAL POWER above 5 percent of RATED THERMAL POWER.

c. Above 5 percent of RATED THERMAL POWER, POWER OPERATION may

Changes to this Unit 1 material are addressed in the Unit 2 Markup and DOCs

ACTION 4 - a. MODE 2 (Below P-6); with one source range neutron flux channel inoperable, immediately suspend operations involving positive reactivity additions.

b. MODE 3, 4 and 5; with one source range neutron flux channel inoperable, restore the inoperable channel to OPERABLE status within 48 hours or open the reactor trip breakers within the next hour.

c. MODE 2 (Below P-6), 3, 4 and 5; with two source range neutron flux channels inoperable, immediately open the reactor trip breakers.

ACTION 5 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement:

a. Suspend operations involving positive reactivity additions,(7) and

LA4

Bases

b. ~~Close unborated water source isolation valve(s)~~ (1CH-90) or (1CH-91 and 1CH-93) within 1 hour, and

Bases

c. Perform Surveillance Requirement 4.1.1.1.1 or 4.1.1.2, as applicable, within the next hour and at least once per 12 hours thereafter.

ACTION 6 - Not Applicable.

Changes to this Unit 1 material are addressed in the Unit 2 Markup and DOCs

(7) Plant cooldown is allowable provided the temperature change is accounted for in the calculated shutdown margin.

INSTRUMENTATION

A1

3/4 3.3.2 (This Specification number is not used.)

Page Deleted

UNIT 1 PAGE

A1

INSTRUMENTATION

3/4.3.3.3 (This Specification number is not used.)

Page Deleted

UNIT 1 PAGE

A1

3/4.3.3.4 (This Specification number is not used.)

Page Deleted

(Next page is 3/4 3-44)

UNIT 1 PAGE

A1

INSTRUMENTATION

3/4.3.3.7 (This Specification number is not used.)

Page Deleted

A1

3/4.3.3.2 (This Specification number is not used.)

Page Deleted

A1

~~3/4.3.3.3 (This Specification number is not used.)~~

Page Deleted

A1

3/4.3.3.4 (This Specification number is not used.)

Page Deleted

(Next page is 3/4 3-52)

A1

3/4.3.3.6 (This Specification number is not used.)

Page Deleted

A1

3/4.3.3.7 (This Specification number is not used.)

Page Deleted

3.3B Instrumentation

DISCUSSION OF CHANGES

ITS 3.3.3 Post Accident Monitoring (PAM) Instrumentation
CTS 3.3.3.8 Post Accident Monitoring (PAM) Instrumentation
CTS 3.3.3.1 Radiation Monitoring
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 3 - Relaxation of Completion Time)* CTS Action A addresses a single inoperable channel in one or more PAM Functions. The CTS Action is revised to extend the allowed restoration time of 7 days to 30 days. In addition, the CTS Action requirement to place the plant in Mode 4 if the affected channel is not restored to operable status is replaced with ITS Action Condition B. ITS Action Condition B requires that action be initiated immediately in accordance with Specification 5.6.5. Specification 5.6.5 requires that a report be sent to the NRC within 14 days outlining the pre-planned alternate method of monitoring the Function, the cause of the inoperability, and the plans and schedule for restoring the inoperable channel(s) of the Function to operable status. The proposed changes are consistent with the ISTS.

The proposed changes are acceptable due to the passive function of the PAM instrumentation (indication only) and the ability to adequately respond to an accident or event using redundant or alternate indications. In addition, the Completion Time extension is justified based on the low likelihood of an event occurring within the allowed Completion Time that would require the affected PAM Function to be operable. If the channel can not be restored to Operable status within 30 days, ITS Action Condition B requires that an alternate method of monitoring the Function be identified and a report submitted to the NRC in 14 days outlining the alternate indication method and the plans and schedule for restoring the function to operable status. The change to submit a report to the NRC and utilize alternate indication methods in lieu of a plant shutdown is acceptable, as it takes into account the adequacy of the alternate indication(s) available to monitor the required parameter and that action is taken to fully implement the appropriate alternate monitoring method(s) prior to the loss of functional capability. In addition, the proposed ITS Action Condition B requires a report to be issued to advise the NRC of the circumstances, alternate method(s) implemented, and expected duration of the inoperability.

The proposed changes are designated less restrictive as they result in additional time being allowed to restore the inoperable PAM instrumentation to operable status.

L.2 *(Category 3 - Relaxation of Completion Time)* CTS Action b addresses the condition of instruments with less than the minimum channels operable and requires the inoperable channel(s) to be restored to operable status in 48 hours or that the plant be placed in Hot Shutdown in the following 12 hours. The corresponding ITS Action Conditions C, D, E and F address one or more Functions with two or more inoperable channels. Required Action C.1 allows 7 days to restore all but one of the inoperable channels (which effectively leaves the

inoperability within ITS Action Condition A for a single inoperable channel). Failure to meet Required Action C.1 results in entry into ITS Action Condition D. Required Action D.1 requires entry into the Action Condition referenced on Table 3.3.3-1 for the affected Function. Table 3.3.3-1 references either Condition E or F for the majority of Functions listed on Table 3.3.3-1. Most Functions listed on Table 3.3.3-1 are assigned Condition E. Action Condition E results in the plant being placed in Mode 4 within 12 hours similar to CTS Action b. As such, the addition of ITS Action Condition E does not introduce a significant change to the CTS. However, Action Condition F, assigned to two Functions on ITS Table 3.3.3-1, does not specify a plant shutdown. Action Condition F requires action to be initiated immediately in accordance with Specification 5.6.5. Specification 5.6.5 requires that a report be sent to the NRC within 14 days outlining the pre-planned alternate method of monitoring the Function, the cause of the inoperability, and the plans and schedule for restoring the inoperable channel(s) of the Function to operable status. Action Condition F is assigned to the Reactor Vessel Water Level and Containment Area Radiation (High Range) Functions on ITS Table 3.3.3-1. The changes to the Containment Area Radiation Function are discussed in the DOCs associated with CTS 3.3.3.1, "Radiation Monitoring." This DOC addresses the changes to the CTS requirements for PAM instrumentation which include changes to the Reactor Vessel Water Level Function.

The significant changes introduced by the new ITS Actions used in place of CTS Action b include:

- The extension of the 48 hour CTS restoration time to 7 days (by ITS Action Condition C), and
- The removal of the shutdown requirement for the Reactor Vessel Water Level PAM Function (by the assignment of Action Condition F to this Function in ITS Table 3.3.3-1).

The purpose of shutdown Actions is to provide an acceptable limit on operation in the Applicable Modes when required equipment is inoperable. The proposed change extends the existing limit on operation from 48 hours to 7 days for all instrument Functions and further extends the operating allowance for the Reactor Vessel Water Level Function provided the required report is sent to the NRC. The proposed change is consistent with the industry standard operating limits in the ISTS (i.e., NUREG-1431) for this equipment. The changes are acceptable because they take into consideration the relatively low likelihood of an event that would require the use of the affected PAM Function, the availability of alternate means to obtain the information, and the fact that the indication is passive and does not provide any automatic protective actions. In addition, the proposed change provides additional restoration time that reduces the potential for a unit transient (i.e., reduces risk) introduced by a plant shutdown and restart due solely to inoperable indicating instruments that provide no automatic protective features. In the case of the Reactor Vessel Water Level Function, where the operating time may be extended beyond the 7 days, the additional requirement to file a report with the NRC must be met. The required report must outline the pre-planned alternate method of monitoring the Function, the cause of the inoperability, and the plans and schedule for restoring the inoperable channel(s) of the Function to operable status. The additional NRC reporting requirement associated with extending the operating time beyond 7 days for the Reactor Vessel Water Level Function assures that adequate regulatory control is maintained. These changes

are designated less restrictive because additional time is allowed in the ITS to restore channels to operable status than was allowed in the CTS.

L.3 *(Category 1 Relaxation of LCO Requirements)* The Total Number of channels for the Pressurizer Water Level PAM Function on Table 3.3-11 is currently specified as 3. The revised ITS Table 3.3.3-1 "Required Channels" specified for the Pressurizer Water Level PAM Function is 2. This change reduces the number of Pressurizer Water Level channels required to be operable on Table 3.3-11.

The basis of the PAM requirements for multiple channel Functions is that two channels are maintained operable to assure at least one channel remains operable to accomplish the required PAM Function. As such, the proposed change is acceptable because it continues to require that two channels are maintained operable such that in the event of a single failure, one channel will still be operable to provide the required PAM Function. The current requirement for 3 channels is overly conservative for this purpose and is not necessary to assure the availability of the Function in the event of a single failure. Therefore, the proposed change continues to provide adequate assurance that the PAM Function will be available, when required, consistent with similar two channel requirements for other PAM Functions. This change is designated less restrictive as it reduces the number of indication channels required operable in the PAM TS.

L.4 *(Category 1 Relaxation of LCO Requirements)* CTS Table 3.3-11 specifies a Total Channels requirement of 2 channels of Auxiliary Feedwater (AFW) Flow per Steam Generator (SG) for Unit 2 and 1 channel of AFW Flow per SG for Unit 1. The corresponding ITS requirement specifies 2 Required Channels of "Secondary Heat Sink Indication" for each SG for both Unit 1 and 2. The two channel ITS requirement is modified by footnote (d) which allows the requirement to be met by using any combination of AFW Flow and SG Water Level Narrow Range (NR). The addition of SG Water Level NR represents a new PAM Function not previously identified in the CTS. The CTS is revised to conform to the ITS. This changes the CTS by introducing a new PAM Function "Secondary Heat Sink Indication" that may be comprised of a combination of AFW Flow and SG Water Level NR channels for each SG. This change allows additional channels besides the AFW Flow channels (i.e., 3 channels of SG Water Level NR per SG) to be used to meet the LCO requirement of 2 operable "Secondary Heat Sink Indication" channels. The change also makes the Unit 1 and Unit 2 PAM requirements specified in the CTS the same (i.e., the Unit 1 requirement for 1 channel per SG is revised to 2 channels per SG). In addition, the proposed ITS format for this new PAM Function lists each SG as a separate line item on the ITS PAM Table.

The purpose of the CTS AFW Flow PAM Function is to provide an indication to confirm the availability of the associated SG for use as a heat sink. By verifying the AFW System capability to feed the SG, via the AFW flow indication, the SG can be considered available for use as a heat sink. However, like most PAM Functions, alternate indications are available that provide similar information. In this case, the SG Water Level NR can be used to confirm the availability of a SG for removing decay heat. The ability to maintain the SG level within the NR indication also confirms an adequate water volume for decay heat removal as well as confirming the associated AFW system capability to feed the SG. The addition of the SG Water Level NR channels (to the PAM TS) makes the proposed change

possible. The proposed change, via new footnote (d), would allow a combination of the AFW Flow channels (1 per SG for Unit 1 and 2 per SG for Unit 2) and the SG Water Level NR channels (3 per SG) to be used to satisfy the requirement for two operable channels per SG for the common PAM function, "Secondary Heat Sink Indication." The proposed change is acceptable due to the similar nature of the information provided by these indications and because it will continue to assure the necessary information is available to the control room in a similar manner as before. In addition, the proposed change will allow Unit 1 to specify 2 channels of this Function operable for each SG. As Unit 1 only has a single channel of AFW flow per SG available in the control room, the proposed change allows additional operating flexibility for Unit 1 to credit the similar information provided by the SG Water Level NR to satisfy this PAM Function. Therefore, the proposed change helps to provide consistent PAM requirements for both units without adversely affecting the safe operation of either unit. It should be noted that the allowance to use a combination of these indication channels (AFW Flow and SG Water Level NR) in the PAM TS was previously approved by the NRC for the D. C. Cook plant. Although this change includes the addition of new instrumentation to the PAM TS, it is designated as less restrictive because the addition of the new instrumentation results in additional operating flexibility (i.e., more available channels) to meet the requirement for 2 operable channels per SG.

L.5 *(Category 2 Relaxation of Applicability)* The containment area radiation monitor requirements include an Applicability of Modes 1, 2, 3, and 4 for the Containment Radiation Monitors. The corresponding PAM ITS Applicability is Modes 1, 2, and 3. The CTS is revised to conform to the ITS. This changes the CTS by eliminating the CTS Mode 4 applicability for the Containment Area Radiation Monitor indication function in the PAM ITS.

The Bases for the PAM Function Mode of applicability is related to the Design Basis Accidents associated with the PAM Functions. In Mode 4, the probability and consequences of potential accidents are reduced such that the PAM indication requirements are no longer necessary to assure the safe operation of the plant. The primary function of the Containment Area Radiation Monitors is the PAM indication they provide. Therefore, based on the retention of the Containment Radiation Monitor indication function in the TS for PAM purposes, the proposed change to revise the Mode of Applicability consistent with the PAM TS is acceptable. It should be noted that the Mode 4 applicability for the Containment Area Radiation Monitors will continue to be specified in the LRM in support of the alarm function provided by these monitors. The proposed change is designated less restrictive because the change reduces the Applicable Modes in the CTS.

L.6 *(Category 3 - Relaxation of Completion Time)* CTS Action 35 states; "with the number of OPERABLE channels less than required by the Minimum Channels OPERABLE requirement, either restore the inoperable channel(s) to OPERABLE status within 72 hours, or: Initiate the preplanned alternate method of monitoring the appropriate parameter(s), and Return the channel to OPERABLE status within 30 days, or, explain in the next Annual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner". The corresponding PAM ITS Actions provide Action Condition A for a single inoperable channel which allows 30 days to restore the inoperable channel before any other Actions must be taken. In addition, the ITS provides Action Condition C for two or more

inoperable channels which allows 7 days to restore all but one channel to operable status before any other Action must be taken. If ITS Action Condition A is not met, ITS Action Condition B requires that action be initiated immediately in accordance with Specification 5.6.5 which requires that a report be submitted to the NRC within the following 14 days to outlining the inoperability, repair schedule, and alternate monitoring methods being used in place of the inoperable PAM instrumentation. If ITS Condition C is not met, ITS Condition D requires that ITS Condition F be entered immediately. ITS Condition F requires that action be initiated immediately in accordance with Specification 5.6.5 which requires a report as described above. The CTS is revised to conform to the ITS. This changes the CTS Actions by allowing up to 30 days for a single inoperable channel and 7 days for two or more inoperable channels before action must be taken to implement alternate methods of monitoring the affected PAM Function and an additional 14 days is provided before the required report must be submitted.

The purpose of the TS Actions is to require the appropriate remedial or compensatory measures be taken within the specified time to provide assurance that the plant will continue to be operated in a safe manner when required equipment is inoperable. The proposed change which extends the time allowed for inoperable Containment Area Radiation Monitor(s) before action other than restoration of the inoperable monitors must be initiated is acceptable because it takes into account the availability of redundant or alternate indications that can provide adequate information in the control room during the time allowed by the Action and the low probability of an event occurring that would require the primary PAM indication to be operable during this time. In addition, if the PAM Function is not restored to operable status in the specified time the Actions require that the NRC be advised by submitting a timely report describing the inoperabilty, restoration plans, and alternate methods being used. For the Containment Area Radiation Monitors, alternate installed monitors, as well as portable monitors, are available to be used in lieu of the primary monitors. Thus, considering the passive nature of the PAM Function, the redundant or alternate methods of monitoring available, and the low likelihood of an event occurring that would require the PAM Function to be operable, the proposed ITS Actions continue to provide adequate assurance the plant is operated in a safe manner when the Containment Area Radiation Monitor channel(s) are inoperable. The proposed change is considered less restrictive because it allows more time for restoring inoperable monitor(s) than the CTS.

L.7 *(Category 7 - Relaxation of Surveillance Frequency)* The CTS Channel Check surveillance for the Containment Area Radiation Monitors is required to be performed once per shift or once per 12 hours. The corresponding PAM ITS Channel Check is required to be performed on a monthly basis. Therefore, the proposed change to move the containment area radiation monitor indication function to the PAM Technical Specification revises the applicable Channel Check surveillance from a 12-hour interval to a monthly interval.

The purpose of the Channel Check Surveillance is to help detect gross channel failures between 18 month Channel Calibrations. The Channel Check surveillance is performed at different intervals for different indications. Indications that provide information for parameters vital to the normal operation of the plant are assigned more frequent surveillance intervals. The proposed change is

acceptable, because it provides a more appropriate surveillance interval for this type of indication that is consistent with the surveillance interval for other PAM instrumentation. In addition, based on the operating experience for the other PAM instrumentation, the monthly interval for the Channel Check continues to provide adequate assurance that the required indication is maintained operable. As the proposed change continues to provide adequate assurance that the required indication is maintained operable, the change does not adversely affect the safe operation of the plant. The proposed change is designated less restrictive because a less frequent surveillance interval is required in the ITS than in the CTS.

More Restrictive Changes (M)

M.1 The CTS PAM instrumentation listed on Table 3.3-11 is revised by the addition of new instrumentation consistent with the proposed list of PAM Functions on ITS Table 3.3.3-1. The following list includes the new PAM Functions introduced by the ITS and the associated Function number from ITS Table 3.3.3-1:

Table 3.3.3-1 Function Number	Function Title
1	Power Range Neutron Flux
2	Intermediate Range Neutron Flux
3	Source Range Neutron Flux
4	RCS Hot Leg Temperature (Wide Range)
5	RCS Cold Leg Temperature (Wide Range)
6	RCS Pressure (Wide Range)
10	Containment Area Radiation (High Range) (Moved from Radiation Monitoring TS)
12	SG Water Level (Wide Range)
13. a), b), & c)	SG Pressure (SGs A, B, & C)
14	Condensate Storage Tank Level
15	Refueling Water Storage Tank Level (Wide Range)
16	Penetration Flow Path Containment Isolation Valve Position
18. a), b), & c)	Secondary Heat Sink Indication (For SGs, A, B, & C)
19	High Head SI Automatic Injection Header Flow

As the addition of ITS Function number 18 represents a relaxation in the CTS PAM requirements for AFW Flow indication, it is discussed in DOC L.4. All the PAM Functions listed above are used to monitor Regulatory Guide 1.97 Type A and or Category 1 variables (consistent with the guidance in NUREG-1431) except for the following Functions:

- Unit 2 Refueling Water Storage Tank (RWST) Level (Wide Range) is added to the proposed PAM TS. The Unit 2 RWST Level (Wide Range) indication is classified as a Regulatory Guide 1.97 Type D, Category 2 variable. However, this Unit 2 indication was determined to provide important information similar to the Unit 1 RWST Level indication which was classified as a Regulatory Guide 1.97 Type A, Category 1 variable. The inclusion of this Unit 2 indication will help to make the PAM requirements for both units consistent. The inclusion of this indication in the PAM TS represents a new TS requirement for both units.

- Unit 2 Containment Isolation Valve Position Indication is added to the proposed PAM TS. The Unit 2 Containment Isolation Valve Position indication is classified as a Regulatory Guide 1.97 Type C, Category 2 variable. However, this Unit 2 indication was determined to provide important information similar to the Unit 1 Containment Isolation Valve Position indication which was classified as a Regulatory Guide 1.97 Type B, Category 1 variable. The inclusion of this Unit 2 indication will help to make the PAM requirements for both units consistent. The inclusion of this indication in the PAM TS represents a new TS requirement for both units.

- Unit 1 and Unit 2 High Head Safety Injection (SI) Automatic Injection Header Flow is added to the proposed PAM TS. The High Head SI Automatic Injection Header Flow (i.e., high head SI total flow) indication is classified as a Regulatory Guide 1.97 Type D, Category 2 variable for both units. As this variable is not classified as a Type A or Category 1 variable it was not designed as such. There is only a single channel of control room indication available for each unit. This variable has been identified as the preferred control room indication for confirming automatic SI initiation. Confirming automatic SI initiation is important in order to determine if manual action is needed to assure high head SI initiation. Therefore, it is included in the proposed PAM TS for both units. Although this variable does not meet the criteria for inclusion in the PAM ITS (i.e., it is not classified as a Regulatory Guide 1.97 Type A or Category 1) it is included in the proposed ITS in recognition of its importance in confirming automatic high head SI initiation.

The proposed additions include specifying (2) Required Channels for each of the new Functions except for the SG Water Level (Wide Range) Function which requires (3) total channels operable and the High Head SI Automatic Injection Header Flow (discussed above) which only requires a single operable channel. The requirement for two operable channels satisfies the PAM requirement for redundant channels to ensure at least one channel is operable in post accident

conditions. The SGs are designed with a single wide range level channel per SG. Therefore, in order to ensure the continued operability of the SG wide range SG water level indication all three available channels are required operable in the proposed PAM ITS. The single channel of High Head SI Automatic Injection Header Flow specified in the proposed PAM ITS is discussed above.

The proposed PAM Function additions listed above include the applicable footnotes (a and b) necessary to clarify the number of required channels for the Containment Isolation Valve Position Indication Function. The addition of these footnotes is consistent with the corresponding ISTS footnotes and is necessary to define the channel requirements consistent with the containment isolation valve design. Footnote (c) is associated with the Core Exit Temperature Function and is described in DOC A.6. Footnote (d) is associated with Secondary Heat Sink Indication and is discussed in DOC L.4.

The purpose of the PAM TS is to ensure sufficient indication instrumentation is maintained operable to provide the necessary indication in post accident conditions. The proposed change includes the addition of indicating instrumentation that provides information to the operators for use in mitigating the consequences of accidents. The proposed change also includes the appropriate surveillance requirements for each new Function to ensure the Functions are maintained operable in accordance with the PAM technical specification requirements. The proposed change enhances the existing CTS requirements by providing a more complete set of PAM indications in the TS. As such, the proposed change is acceptable because it provides additional assurance that instrumentation necessary to perform PAM functions is maintained operable. The addition of the instrumentation listed above serves to improve the diversity and redundancy of the required PAM instrumentation without adversely affecting equipment availability or the safe operation of the plant. The proposed change is designated more restrictive because new instrumentation is added to the PAM TS.

M.2 The "S/U" frequency for the Channel Check on the Auxiliary Feedwater Flow Rate (i.e., the ITS Secondary Heat Sink Indication) PAM Function is revised to an "M" frequency. Additionally, the footnote in Table 4.3-7 that specifies the Auxiliary Feedwater Flow Rate PAM Function Channel Check is to be performed in conjunction with Surveillance Requirement 4.7.1.2.7 following an extended plant outage is deleted. These changes result in a Channel Check being performed on this PAM Function monthly consistent with the Frequency of all other PAM functions.

The Channel Check requirement on current TS Table 4.3-7 for the AFW Flow Rate PAM Function specifies that the surveillance is only required during startup (S/U). The Channel Check requirement is further modified by an asterisk footnote which specifies that the Channel Check need only be performed in conjunction with Surveillance Requirement 4.7.1.2.7 following an extended outage. CTS Surveillance 4.7.1.2.7 is contained in AFW Technical Specification 3/4.7.1.2. The surveillance requires that AFW flow to the steam generators be verified after an extended shutdown (i.e., shutdown in Modes 5 or 6 for greater than 30 days). The CTS requirement is intended to specify the performance of a Channel Check only when the AFW system is in service (i.e., in conjunction with Surveillance Requirement 4.7.1.2.7 following an extended outage). The CTS requirement

could result in a Channel Check only being performed once every 18 months after the normal extended outage due to refueling.

The Channel Check surveillance requirement for the AFW Flow Rate PAM Function is revised to be required every month without any footnote exception consistent with all the other PAM Functions in Technical Specification 3/4.3.3.8. Although the AFW system may not normally be supplying water to the steam generators, the performance of a Channel Check of the indicators may still detect a potential instrument failure between the 18-month Channel Calibrations. As discussed in the ISTS Bases for a Channel Check, the Channel Check ensures that a gross instrumentation failure has not occurred between Channel Calibrations. As the Channel Check is a qualitative assessment (as defined in the Technical Specifications) and is not intended to be a precision calibration, it can be performed on instruments when the measured parameter indicates zero. As such, the proposed change is acceptable, because it provides an additional safety benefit by requiring formal operability verifications of the AFW Flow Rate indicators (even when the AFW system may not be in service) that could detect a gross instrument failure between Channel Calibrations consistent with the purpose of a Channel Check. The proposed change is designated more restrictive because it requires the surveillance to be performed more frequently than the CTS.

M.3 The N/A frequency for the Channel Check on the Containment Wide-Range Pressure PAM Function is deleted, and a Channel Check will be required to be performed on the Containment Wide-Range Pressure PAM Function consistent with the Channel Check Frequency of the other PAM functions (i.e., monthly).

CTS Table 4.3-7 currently exempts the Containment Wide Range Pressure PAM Function from a monthly Channel Check with the annotation of N/A. The CTS exception for the performance of a Channel Check is due to the wide indication range of the instruments (0-200 psia for Unit 1 and 0-180 psia for Unit 2) and the expected normal operating indication being at the very low end of the indicating range. With normal operating pressure in containment, accurate pressure readings from the wide range instruments would be difficult. Therefore, the CTS did not require the performance of Channel Checks for this instrumentation. However, the CTS requirements result in no formal (TS) operability verifications of the wide range instrumentation between the required 18 month Channel Calibrations.

The exemption provided by the CTS is deleted consistent with the ITS. Although the containment pressure indicated on the wide range instrumentation may not be read with a high degree of accuracy, the performance of a Channel Check of the indicators may still detect a potential instrument failure between 18 month Channel Calibrations. As discussed in the ISTS Bases for a Channel Check, the Channel Check ensures a gross instrumentation failure has not occurred between Channel Calibrations. Since the Channel Check is a qualitative assessment (as defined in the Technical Specifications) and is not intended to be a precision calibration, it can be performed on instruments when the measured parameter normally indicates in the extreme low end of the indicating range (i.e., with less than optimum accuracy). In this case, the performance of the Channel Check surveillance serves, as intended, to detect a gross failure of a pressure indicator. As such, the proposed change is acceptable because it provides an additional safety benefit by requiring formal operability verifications of the containment wide

range pressure indicators that could detect a gross instrument failure between Channel Calibrations consistent with the purpose of a Channel Check. The proposed change is designated more restrictive because it requires the surveillance to be performed more frequently than the CTS.

M.4 CTS 3.3.3.1 Action "c" provides an exception to the requirements of Specification 3.0.3. Specification 3.0.3 contains requirements that would become applicable if the CTS did not provide an appropriate Action or the CTS Actions were not met for some reason. Specification 3.0.3 would require that the plant be placed in a Mode where the requirements of CTS 3.3.3.1 were no longer applicable. The PAM ITS does not include an exception to ITS LCO 3.0.3. As such, the proposed change would result in ITS LCO 3.0.3 being applicable if the PAM ITS did not contain an appropriate Action for an inoperable condition or if the ITS Actions were not met.

The purpose of Specification 3.0.3 or ITS LCO 3.0.3 is to assure the plant is placed in a Mode where the affected LCO is no longer applicable if the affected LCO or Actions are not met. The proposed change which would result in the application of LCO 3.0.3 to the Containment Radiation Monitor indication Function is acceptable because it will provide additional assurance that the plant continues to be operated in a safe manner. If the PAM ITS Actions are not met or do not provide an appropriate Action for the inoperable condition, LCO 3.0.3 will conservatively require that the plant be placed in a Mode where the PAM requirements are not applicable. Thus, the proposed change provides appropriate guidance to assure the plant is placed in a safe condition. The proposed change is designated more restrictive because it removes the CTS exception to Specification 3.0.3.

M.5 CTS Action 35 part "b" contains a requirement that becomes applicable if the Containment Area Radiation Monitor channel(s) are not restored to operable status within the allowed time. The CTS Action requires that an explanation of why the inoperable instrument was not corrected in a timely manner be included in the next Annual Radioactive Effluent Release Report. The corresponding ITS Action if the Containment Area Radiation Monitor channel(s) are not restored to operable status within the specified Completion Time requires immediate compliance with ITS Specification 5.6.5. ITS Specification 5.6.5 states that "a report shall be submitted within the following 14 days. The report shall outline 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 CTS is revised to conform to the ITS. This changes the CTS by requiring a more timely and complete NRC report be submitted when the Containment Area Radiation Monitor channel(s) are not restored to operable status within the specified Completion Time.

The purpose of the CTS (and ITS) Actions is to advise the NRC regarding the failure to restore the required channels to operable status in the allowed time. The CTS requirement allows the NRC report to be included in an annual report that could allow up to a full year before the report is submitted to the NRC. The proposed change is acceptable because it provides a more complete and timely report to the NRC. The additional requirements of the ITS provide an enhanced assessment of the plant condition within a reasonable time to more fully advise the NRC that the plant continues to be operated in a safe manner. The proposed

change does not impose an undue burden on plant personnel nor does the proposed change adversely affect the safe operation of the plant. The proposed change is designated more restrictive because a more complete and timely report is required in the ITS than in the CTS.

M.6 (Unit 1 only) The CTS PAM requirement for Reactor Vessel Level Indicating System requires one channel operable. The corresponding ITS PAM specifies 2 Reactor Vessel Water Level channels operable. The CTS is revised to conform to the ITS. This changes the CTS to require redundant channels of this PAM Function operable.

The purpose of the PAM Specification is to provide assurance that the required indications are operable when necessary to assist operators in mitigating the consequences of design basis accidents. The proposed change is acceptable because it specifies the minimum number of channels necessary, given a single failure, to assure the indication is available in post accident conditions. The proposed change provides additional assurance the required indication is operable in post accident conditions. By increasing the required channels from one to two, the proposed change does not adversely affect the operability or availability of the PAM instrumentation. As such, the proposed change does not adversely affect the safe operation of the plant. The proposed change is designated more restrictive because the change increases the number of channels required operable in the ITS.

Relocated (R)

R.1 The following Unit 1 and Unit 2 CTS PAM functions are proposed for relocation to the Licensing Requirements Manual (LRM):

- RCS Subcooling Margin Monitor
- PORV Limit Switch Position Indicator
- PORV Block Valve Limit Switch Position Indicator
- Safety Valve Position Indicator (Unit 2), and
- Safety Valve Acoustical Detector Position Indicator (Unit 1).

TS requirements relocated to the LRM are considered to be incorporated by reference in the BVPS Unit 1 and 2 UFSARs (as applicable). Therefore, changes to the relocated material will be controlled in the same manner as changes to the UFSAR, i.e., in accordance with 10 CFR 50.59. The Unit 1 and 2 PAM Functions selected for relocation to the LRM will be relocated along with the associated TS 3/4.3.3.8 requirements (i.e., LCO, Actions, and Surveillances) to form a complete set of requirements for the relocated PAM instrumentation in the LRM.

The 10 CFR 50.36 (c)(2)(ii) Criteria for the evaluation of TS requirements forms the basis for relocating the proposed BVPS PAM Functions to the LRM. The 10 CFR 50.36 Criteria and application to the PAM Functions are discussed below.

Criterion 1: Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.

Criterion 2: A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 3: A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 4: A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

The purpose of the PAM instrumentation included in the TS is to function in a post accident environment to provide the following:

- Primary indications necessary for operators to take manual actions (for which no automatic control is provided) to mitigate the consequences of an accident (i.e, Regulatory Guide 1.97 Type A variables), and
- Key indications (i.e, Regulatory Guide 1.97 Category 1 variables) that may be deemed be risk significant because they are used to:
    - Determine whether a system important to safety is performing its intended function,
    - Determine the likelihood of a gross breach of a barrier to radioactive release, or
    - Determine the need to initiate action to protect the public and to estimate the magnitude of the threat.

10 CFR 50.36 (c)(2)(ii) Criterion 1 applies to instrumentation used to detect RCS leakage and is satisfied by the instrumentation included in the RCS Leakage Detection Instrumentation TS. 10 CFR 50.36 (c)(2)(ii) Criterion 2 applies to a process variable, design feature, or operating restriction that must be maintained within limits by a Technical Specification requirement to preserve an initial condition assumed in a design basis accident. Individual TS for process variables such as boron concentration and operating limits such as Rod Insertion Limits address items that satisfy 10 CFR 50.36 (c)(2)(ii) Criterion 2. Based on the description of the PAM functions above, a required PAM TS indication may satisfy either Criterion 3 (primary indication to initiate an action) or Criterion 4 (risk) of 10 CFR 50.36 (c)(2)(ii) when evaluating individual indications for retention in the PAM TS. Each BVPS indication proposed for relocation is evaluated below.

The Unit 1 and Unit 2 RCS Subcooling Margin Monitor contained in CTS Tables 3.3-11 and 4.3-7 (Instrument 3) of CTS 3/4.3.3.8, "Accident Monitoring Instrumentation."

The RCS subcooling indication provides information to the control room operators regarding the core cooling safety function and is used to satisfy an SI termination criteria. The inputs to the RCS subcooling monitor are the core exit thermocouples for RCS temperature and the wide range RCS pressure indication for RCS pressure. Since both of these indications are independently available in the control room and are also included in proposed ITS PAM TS 3.3.3, the RCS subcooling monitor only provides a verification of these other primary indications. The Unit 2 UFSAR clearly identifies the RCS Subcooling Margin Monitor as backup instrumentation (Unit 2 UFSAR Table 7.5-4). Based on the inclusion in the PAM ITS of the primary instruments for this indication (i.e., RCS temperature and pressure) the RCS subcooling monitor is not the primary indication for this variable or the key indication in terms of risk. The RCS pressure and temperature indications included in the proposed PAM ITS are classified as Regulatory Guide 1.97 Category 1 variables, the RCS subcooling monitor is not classified as a Regulatory Guide 1.97 Category 1 instrument. Therefore, the RCS subcooling monitor does not satisfy either Criterion 3 or 4 of 10 CFR 50.36(c)(2)(ii), and should not be included in the PAM ITS.

The RCS subcooling indication is currently classified as Regulatory Guide 1.97 Type B, Category 2 for BVPS Unit 1 and Type A, Category 2 for Unit 2. However, based on the discussion above, the RCS subcooling indication may be considered to fulfill the post accident monitoring function of a Regulatory Guide 1.97 Type B and Category 3 variable for both BVPS Unit 1 and Unit 2. The RCS subcooling indication provides information to indicate whether the core cooling safety function is being accomplished. Therefore, for the purpose of determining the content of the PAM TS, this indication may be considered to monitor a Regulatory Guide 1.97 Type B variable. As the RCS subcooling indication is a backup to the core exit thermocouples and RCS pressure, this indication can also be considered to monitor a Regulatory Guide 1.97 Category 3 variable.

The Unit 1 and Unit 2 PORV Limit Switch Position Indicator contained in CTS Tables 3.3-11 and 4.3-7 (Instrument 5 (Unit 1) and 4 (Unit 2)) of CTS 3/4.3.3.8, "Accident Monitoring Instrumentation."

The PORV Limit Switch Position Indicators provide information to the control room operators related to the position of the pressurizer PORVs. This indication could be used to diagnose a high RCS pressure or a stuck open PORV (LOCA) at lower RCS pressures. The DBA analysis of an inadvertent opening of the PORV does not rely on operator diagnosis and closure of the PORV or block valve; the DBA analysis assumes that automatic safety injection actuation will provide adequate protection. However, the PORV Limit Switch Position indicator does not provide an indication for operator actions for which no automatic control is provided and it is not identified as a key indication from a risk perspective (i.e., it is

not classified as Regulatory Guide 1.97 Category 1). Therefore, it does not satisfy either Criterion 3 or 4 of 10 CFR 50.36(c)(2)(ii) and should not be included in PAM TS.

The PORV Limit Switch Position Indicator is currently classified as Regulatory Guide 1.97 Type D, Category 2 for BVPS Unit 2 and was not classified as a Regulatory Guide 1.97 instrument for BVPS Unit 1.

The Unit 1 and Unit 2 PORV Block Valve Limit Switch Position Indicator contained in CTS Tables 3.3-11 and 4.3-7 (Instrument 6 (Unit 1) and 5 (Unit 2)) of CTS 3/4.3.3.8, "Accident Monitoring Instrumentation."

The PORV Block Valve Limit Switch Position Indicator provides information to the control room operators on the position of the pressurizer PORV block valves. It could be used to diagnose the availability of the pressurizer PORVs for use in depressurizing the RCS or to indicate the isolation of a stuck open PORV (LOCA) at lower RCS pressures. However, the PORV Block Valve Limit Switch Position Indicator does not provide an indication for operator actions for which no automatic control is provided and it is not identified as a key indication from a risk perspective (i.e., it is not classified as Regulatory Guide 1.97 Category 1). Therefore, it does not satisfy either Criterion 3 or 4 of 10 CFR 50.36(c)(2)(ii) and should not be included in PAM ITS.

The PORV Block Valve Limit Switch Position Indicator is not classified as Regulatory Guide 1.97 instrumentation for BVPS Unit 1and 2.

The Unit 1 and Unit 2 Safety Valve (Acoustical Detector (Unit 1) Position Indicator contained in CTS Tables 3.3-11 and 4.3-7 (Instrument 7 (Unit 1) and 6 (Unit 2)) of CTS 3/4.3.3.8, "Accident Monitoring Instrumentation."

The Safety Valve (Unit 2) and Acoustical Detector (Unit 1) Position Indicator provides information to the control room operators on the position of the pressurizer safety valves. It could be used to diagnose high RCS pressure or a stuck open safety valve (LOCA) at lower RCS pressures. However, the Position Indicator does not provide an indication for operator actions for which no automatic control is provided and it is not identified as a key indication from a risk perspective (i.e., it is not classified as Regulatory Guide 1.97 Category 1). Therefore, it does not satisfy either Criterion 3 or 4 of 10 CFR 50.36(c)(2)(ii) and should not be included in the PAM ITS.

The Safety Valve (Unit 2) and Acoustical Detector (Unit 1) Position Indicator is currently classified as Regulatory Guide 1.97 Type D, Category 2 for both BVPS Unit 1 and Unit 2.

R.2 The Unit 1 and 2 CTS 3.3.3.1 contain requirements that address the Containment Area Radiation Monitor alarm and indication function for each unit. The Unit 2 CTS 3.3.3.1 also contains requirements that address the alarm and indication functions of the Unit 2 Main Steam Discharge Effluent Radiation Monitors. The Unit 1 and Unit 2 Containment

Area Radiation Monitor alarm functions (not the indication function) and the Unit 2 Main Steam Discharge Effluent Radiation Monitors (both the alarm and indication functions) including all associated LCO, Applicability, Action, and Surveillance Requirements are proposed to be relocated from the TS to the LRM and ODCM respectively. It should be noted that the Containment Area Radiation Monitor indication function is retained in the proposed PAM ITS. Only the alarm function (and all associated LCO, Actions, etc.,) of the Containment Area Radiation Monitors is proposed for relocation to the LRM.

The following discussion provides information regarding the Unit 1 and 2 Containment Area Radiation Monitor alarms and the Unit 2 Main Steam Discharge Radiation Monitors proposed for relocation.

The 10 CFR 50.36 (c)(2)(ii) Criteria used to evaluate TS requirements for retention are as follows:

Criterion 1: Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.

Criterion 2: A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 3: A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 4: A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

In addition to the 10 CFR 50.36 (c)(2)(ii) criteria described above the affected radiation monitors are evaluated considering their potential to fulfil the requirement of Post Accident Monitoring (PAM) instrumentation. The purpose of the PAM instrumentation included in the TS is to function in a post accident environment to provide the following:

- Primary indications necessary for operators to take manual actions (for which no automatic control is provided) to mitigate the consequences of an accident (i.e, Regulatory Guide 1.97 Type A variables), and
- Key indications (i.e, Regulatory Guide 1.97 Category 1 variables) that may be deemed be risk significant because they are used to:
    - ➢ Determine whether a system important to safety is performing its intended function,
    - ➢ Determine the likelihood of a gross breach of a barrier to radioactive release, or
    - ➢ Determine the need to initiate action to protect the public and to estimate the magnitude of the threat.

10 CFR 50.36 (c)(2)(ii) Criterion 1 applies to instrumentation used to detect RCS leakage and is satisfied by the instrumentation included in the RCS Leakage Detection Instrumentation TS. 10 CFR 50.36 (c)(2)(ii) Criterion 2 applies to a process variable, design feature, or operating restriction that must be maintained within limits by a TS requirement to preserve an initial condition assumed in a design basis accident. Individual TS for process variables such as boron concentration and operating limits such as Rod Insertion Limits address items that satisfy 10 CFR 50.36 (c)(2)(ii) Criterion 2. Based on the description of the PAM functions above, a required PAM TS indication may satisfy either Criterion 3 (primary indication to initiate an action) or Criterion 4 (risk) of 10 CFR 50.36 (c)(2)(ii) when evaluating individual indications for retention in the PAM TS.

The containment area radiation monitors provide continuous surveillance of radiation levels in containment, where personnel may be present and where significant radiation levels may occur. The alarms associated with the containment area radiation monitors provide warning of high radiation levels and/or abnormal conditions to operating personnel. Additionally, the containment area radiation monitors provide indications used to assess selected plant parameters following an accident consistent with the recommendations of NUREG-0737, "Clarification of TMI Action Plan Requirements" October 1980.

The Unit 2 main steam discharge radiation monitor analyzes the effluent from the steam discharge piping. The monitor provides information used to trend plant effluents to protect the health of plant personnel and to assess plant effluent releases. The alarms associated with the effluent monitors also warn plant personnel of abnormal releases. Additionally, the main steam discharge radiation monitors provide indications used to assess selected plant parameters following an accident consistent with the recommendations of NUREG-0737, "Clarification of TMI Action Plan Requirements" October 1980. Although the main steam discharge radiation monitors may provide an indication of steam generator tube leakage, earlier detection of steam generator tube leakage is provided by more sensitive radiation monitors such as the N-16 radiation monitors on each steam line, the steam generator blowdown radiation monitor, and the condenser air ejector radiation monitor. In addition, other TS requirements (i.e., RCS Operational Leakage) provide specific limits, surveillances, and Actions (including a unit shutdown within 4 hours of exceeding a limit) to assure that steam generator tube leakage is monitored and controlled.

The containment area radiation monitors and main steam discharge radiation monitors provide alarms and indications to alert plant personnel of high radiation conditions and to assist in evaluating and trending plant effluents. The TS Actions applicable if these monitors are inoperable require that the channel be restored to Operable status within 72 hours, or a preplanned alternate method of monitoring the parameter be initiated and the channel to be restored to Operable status within 30 days or that an explanation be provided in the next Annual Effluent Release Report why the channel was not restored to Operable status in a timely manner. The TS Actions do not impact or reference the operability of other systems or require a unit shutdown. Additionally, the alarm function of the Unit 1 and Unit 2 containment area radiation monitors and all functions of the Unit 2 main steam discharge radiation monitors proposed for relocation do not:

- Provide an automatic initiation function assumed in the safety analysis for any design basis accident described in Unit 1 UFSAR Chapter 14 or Unit 2 UFSAR Chapter 15.

- Provide indication or alarm functions relied on by operators to take manual actions that are assumed in the safety analyses for any design basis accident described in Unit 1 UFSAR Chapter 14 or Unit 2 UFSAR Chapter 15.
- Provide the primary indication that is used to detect and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary, or
- Monitor variables which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

The following discussion also evaluates the Unit 2 Main Steam Discharge Radiation indication with respect to its function as a PAM instrument. The Unit 2 Main Steam Discharge Radiation indication may be used for the diagnosis of a steam generator tube rupture accident, which prompts an operator action for which no automatic actuation is provided. However, with the low fuel rod leakage history of current operating plants, secondary side radiation is not a reliable indicator of a steam generator tube rupture accident. The history of diagnosis and response to a steam generator tube rupture accident has typically been based on increased RCS inventory losses (e.g., decreasing pressurizer level and RCS pressure) and increasing water level in the affected steam generator. These indications provide the most reliable diagnosis of a steam generator tube rupture accident to prompt the appropriate operator actions and these indications are included in the PAM technical specification. In addition, as mentioned previously, the more sensitive radiation monitors (N-16, steam generator blowdown, and condenser air ejector) are used for early detection of SG tube leakage. As such, the Unit 2 Main Steam Discharge Radiation indication is not the primary or key indication relied on to diagnose or mitigate a steam generator tube rupture accident.

Therefore, based on the discussions above, the Unit 2 Main Steam Discharge Radiation indication does not satisfy either Criterion 3 or 4 of 10 CFR 50.36(c)(2)(ii) and should not be included in the PAM TS.

The Main Steam Discharge Radiation indication is currently classified as a Type A, Category 1 variable for Unit 2 based on its potential use in diagnosing a steam generator tube rupture. However, as described above, the Pressurizer Level, RCS Pressure, and SG Water Level indications are the primary or key indications used by the operators to diagnose and take action for a steam generator tube rupture accident. It should be noted that the Pressurizer Level, RCS Pressure, and SG Water Level indications are all required operable in the proposed PAM ITS. As the Main Steam Discharge Radiation indication provides backup diagnostic indications for a steam generator tube rupture accident it was not included in the proposed PAM ITS.

Based on the above discussions, the alarm function of the Unit 1 and Unit 2 containment area radiation monitors and all functions of the Unit 2 main steam discharge radiation monitors do not satisfy any of the 10 CFR 50.36(c)(2)(ii) criteria for retention in the TS. Therefore, the proposed change to relocate the TS requirements for these radiation monitors is acceptable.

The requirements are being relocated to the LRM or ODCM, respectively. Therefore, changes to the relocated material will be controlled in the same manner as changes to the UFSAR, i.e., in accordance with 10CFR 50.59. As such, the relocation of TS requirements to the LRM and ODCM is acceptable, as changes to these documents will be adequately controlled by 10 CFR 50.59. The provisions of 10 CFR 50.59 establish

adequate controls over requirements removed from the TS, and assure future changes to these requirements will continue to be consistent with safe plant operation.

The Unit 1 and 2 containment area radiation monitor (alarm function) and Unit 2 main steam discharge radiation monitors and all associated TS 3.3.3.1 requirements (i.e., LCO, Actions, and Surveillances) will be relocated together to form a complete radiation monitor requirement in the LRM and ODCM respectively. The Containment Area Radiation Monitors will be relocated to the LRM and the Unit 2 Main Steam Discharge Radiation Monitors will be relocated to the ODCM. The requirements for the Main Steam Discharge Radiation Monitors are being relocated to the ODCM instead of the LRM to be consistent with the location selected for the requirements of other effluent radiation monitors previously removed from the technical specifications including the corresponding Unit 1 Main Steam Discharge radiation monitor requirements.

Removed Detail Changes (LA)

None

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 The title of Technical Specification 3/4.3.3.8, "Accident Monitoring Instrumentation," is revised to "Post Accident Monitoring (PAM) Instrumentation." The CTS LCO operability requirement and Actions are revised from referencing instrument "channels" to referencing instrument "Functions." The requirements for each PAM instrument (Function) listed on CTS Table 3.3-11 are further revised to specify the "Required Channels" for each instrument Function instead of the "Total Channels" required for each Instrument. In addition, the CTS reference to "Minimum Channels Operable" on Table 3.3-11 is deleted. The proposed changes are consistent with the presentation of this information in the corresponding ITS 3.3.3, "Post Accident Monitoring (PAM) Instrumentation.

The proposed changes are acceptable because they result in a uniform presentation of the PAM requirements without introducing a technical change to the requirements. The use of the term "Function" in the LCO and on CTS Table 3.3-11 merely replaces the term "channel" in the LCO and "Instrument" in CTS Table 3.3-11 to provide a uniform reference in the ITS. The CTS "Total Channels" is replaced with the ITS "Required Channels" on CTS Table 3.3-11. Except where noted in other DOCs, the number of channels specified remain the same. The corresponding proposed ITS Actions reference one or two inoperable channels associated with a PAM Function. As such, the proposed Actions are consistent with the use of the term Function and "Required Channels" used in the ITS to specify the instrument requirements. In addition, the proposed Actions, by addressing two or more inoperable channels (i.e., ITS Action C) effectively replace the CTS need to reference less than the "Minimum Operable Channels" in the Actions. Thus, the CTS "Minimum Operable Channels" on Table 3.3-11 is not needed and is deleted.

The proposed changes are designated administrative because they represent a change in the format and presentation of the requirements and do not result in a technical change.

A.3 A Note is added to the CTS Actions that states: "Separate Condition entry is allowed for each Function." The ITS Note provides guidance on the application of the Action Conditions to each inoperable PAM instrument Function. The addition of the ITS Note clarifies that the Actions may be entered on a Function basis and is consistent with the change to reference instrument Functions in the LCO and Actions. The change is made to conform to the presentation of this information in the ISTS, and the change is necessary to support the ITS LCO and Actions which are written on a Function basis.

The addition of the ITS Note is acceptable because the CTS Actions do not preclude applying the Actions to multiple Functions specified on CTS Table 3.3-11. The CTS Actions can be applied separately for each inoperable PAM Function listed on Table 3.3-11. The Actions provide appropriate compensatory measures for each inoperable PAM Function and may be applied individually to each Function. Compliance with the Actions for each inoperable Function provides assurance that the plant continues to be operated in a safe manner or requires the plant to be placed in a Mode where the PAM function is no longer required to be operable. Therefore, the addition of the Note is not a technical change and is considered a clarification that improves consistency with the corresponding ITS requirements and presentation. As such, the proposed change is considered administrative in nature and does not adversely affect the safe operation of the plant.

A.4 The CTS Surveillance Requirements consist of a single surveillance (4.3.3.8) and Table 4.3-7. The CTS Surveillance 4.3.3.8 states the defined test requirements (Channel Check and Channel Calibration) and refers to Table 4.3-7 for the specific frequency associated with each PAM Function. The ITS 3.3.3 Surveillance Requirements consist of three separate surveillances SR 3.3.3.1 (Channel Check), SR 3.3.3.2 (Channel Calibration), and SR 3.3.3.3 (TADOT). A note precedes the surveillances and specifies the applicability of the surveillances to the PAM Functions. Each ITS surveillance has a Frequency associated with it and is applicable to all PAM Functions (including the newly added Functions in

ITS Table 3.3.3-1) except as stated in the Notes associated with ITS SRs 3.3.3.2 and SR 3.3.3.3. The notes associated with SR 3.3.3.2 and SR 3.3.3.3 serve to provide a separate TADOT surveillance (SR 3.3.3.3) applicable only to the containment isolation valve position indication Function instead of the Channel Calibration surveillance. In addition, ITS SR 3.3.3.2 contains a Note that excludes Neutron detectors from the Channel Calibration. As the ITS specifies the frequency in each surveillance, the ITS does not use a separate surveillance Table like CTS Table 4.3-7 for this purpose.

The proposed changes result in three significant changes to the CTS Surveillances. The presentation of the surveillances is revised such that CTS Table 4.3-7 is deleted, a separate TADOT surveillance (SR 3.3.3.3) is introduced for the containment isolation valve position indication Function, and an exception to the channel calibration requirement is introduced for neutron detectors.

Due to the format change introduced by the ITS (i.e., each surveillance has a fixed frequency) the CTS table 4.3-7 is no longer required to specify the surveillance frequency. CTS Table 4.3-7 is deleted. This change is acceptable as it results solely from the change in the format and presentation of the CTS surveillance requirements necessary to conform to the ITS. Separate DOCs address any changes to the surveillance frequencies where applicable. As such, the elimination of the separate CTS surveillance Table does not introduce a technical change to the CTS.

The proposed ITS contains SR 3.3.3.3 which requires a Trip Actuating Device Operational Test or TADOT be performed on the Containment Isolation Valve Position Indication Function instead of a Channel Calibration. The containment isolation valve position indication Function consists of valve position limit switches that actuate contacts to indicate valve position remotely. The ISTS includes several defined instrument tests that are applied to the various instruments required Operable in the TS. The ISTS TADOT defined test, which includes guidance for operating and adjusting a "trip actuating device" (i.e., switch) is typically applied to instrument channels consisting of a more simple switch and contact arrangement such as the containment isolation valve position indication channels. The Channel Calibration defined test, which includes guidance for the calibration of instrument channels that include such things as resistance temperature detectors and thermocouples, is more typically applied to instrument channels that monitor a process variable and convert or process the monitored signal through various stages to actuate an output device at a specified setpoint or provide a variable output signal for indication. As such, the TADOT surveillance requirement, which more closely addresses the adjustment of switch contacts, is more appropriate for the containment isolation valve position indication channels than a Channel Calibration. Therefore, the proposed change more accurately matches the instrumentation being calibrated to the defined TS surveillance test requirement. As the Containment Isolation Valve Position Indication Function is being added to the PAM TS, the addition of this surveillance is considered administrative to support the addition of this new Function. The technical change (adding a new PAM Function) is addressed in a separate DOC. As this change does not affect the existing CTS PAM Functions and is needed only to support the addition of a new Function, the change is designated administrative.

Similar to the addition of the TADOT surveillance, the addition of the note providing an exception for neutron detectors in the Channel Calibration surveillance is due solely to the addition of new PAM Functions for neutron flux monitoring. The addition of the power, source, and intermediate range neutron flux indications to the PAM TS is addressed in a separate DOC. The note excluding the neutron detectors from the channel calibration is necessary to support the addition of these new Functions and does not affect any existing CTS PAM Functions. The Channel Calibration, by TS definition, encompasses all the devices in a channel. However, the neutron detectors in the power, intermediate and source range channels are not adjustable devices and are excluded from all channel calibrations in the TS (both CTS and ITS). As such, the addition of the note excluding the neutron detectors from the channel calibration surveillance in the PAM TS maintains consistency with other channel calibration surveillance requirements such as in the Reactor Trip System TS which also exclude neutron detectors. As this change does not introduce a new technical change to the CTS, and is only necessary to support the addition of new PAM Functions, it is designated an administrative change.

A.5 (Unit 2 only) CTS Table 3.3-11 contains a column that specifies the applicable Action(s) for each PAM instrument listed on the Table. The corresponding column in ITS 3.3.3 Table 3.3.3-1 specifies the applicable Action Condition referenced from Required Action D.1. The CTS is revised to conform to the ITS. This changes the CTS by replacing the CTS table column specifying all the applicable Actions for each PAM instrument with the ITS Table column specifying only the Action referenced from Required Action D.1 for each PAM Function.

In the Unit 2 CTS, one PAM instrument listed on Table 3.3-11 had a different Action than the other PAM instruments. The purpose of the CTS Action column was to address the single PAM function for which a special Action (Action c) existed. The PAM instrument for which the specific Action was applicable was relocated from the PAM TS (see applicable R DOC). As such, the CTS Action column is no longer required for its intended purpose. In the ITS, all Actions except Actions E and F are common to the PAM Functions listed on Table 3.3.3-1. Therefore, in the ITS, only Actions E and F must be referenced from the Table as applicable for each PAM Function.

The proposed change to the Actions column in the PAM Table is acceptable because it is necessary to conform to the format and presentation of the PAM requirements in the ITS. Technical changes to the CTS Actions are identified and discussed in separate DOCs. The revision of the PAM table Action column does not introduce any additional technical changes and represents a necessary reformat to conform to the ITS. As the proposed change is the result of changes in the format and presentation of the PAM requirements it is designated administrative.

A.6 The CTS PAM requirement for Core Exit Temperature consists of specifying 4 core exit thermocouples (CETs) per core quadrant. The ITS presents this requirement differently. The corresponding ITS requirement for Core Exit Temperature specifies (2) Required Channels for each core quadrant and lists each quadrant separately. In addition, the ITS requirement for two channels is modified by footnote (c) that requires each channel to contain two CETs. The CTS is revised to conform to the ITS. This changes the CTS by revising the

presentation of the Core Exit Temperature Function to be stated in terms of "Required Channels."

The purpose of the PAM TS requirement is to ensure sufficient indication instrumentation is maintained operable to provide the necessary indication in post accident conditions. The CTS requires (4) CETs per core quadrant. The ITS, by specifying (2) channels per quadrant with each channel consisting of (2) CETs, effectively requires the same number of CETs operable as the CTS. As such, the proposed change is acceptable because it continues to require an adequate number of operable CETs to assure the Core Exit Temperature indication continues to be available for PAM purposes. The proposed change only revises the presentation of this information to be consistent with the ITS. This change in format does not introduce a technical change to the CTS requirements. The proposed change is designated administrative because it does not introduce a technical change to the CTS.

A.7 CTS 3.3.3.1 Action "a" addresses the alarm or trip setpoints associated with radiation monitors. The alarm function of the Radiation monitors is being relocated to the LRM (along with the applicable Actions for the setpoint) and is addressed by an R DOC. CTS Action "b" references Table 3.3-6 for the appropriate Action to take for inoperable radiation monitors. Table 3.3-6 specifies Action 35 for the containment Radiation Monitors. The changes to Action 35 for the Radiation Monitors are addressed in separate DOCs. The ITS PAM requirements that become applicable to the Containment Radiation Monitor indication Function address only the indication Function of each instrument and do not include requirements (i.e., Actions) for alarm or trip setpoints. In addition, the ITS PAM Action requirements are structured differently and do not reference a Table for all Actions (only ITS Action Condition D references the table). As such, CTS Actions "a" and "b" are no longer required for the Containment Radiation Monitor PAM function and are not used in the PAM TS.

As the technical changes to the Actions and the relocation of the alarm setpoint Action are addressed in separate DOCs, this change represents a change in the format and presentation of the Actions that become applicable to the Containment Radiation Monitor indication Function in the PAM TS. The proposed change is acceptable because the eliminated CTS Actions are related to the format, content, and presentation of the CTS and are no longer applicable in the new PAM ITS. The proposed change is designated administrative as it does not introduce a technical change to the TS requirements.

A.8 CTS Surveillance 4.3.3.1 Requires the performance of Channel Checks, Channel Functional Tests, and Channel Calibrations of the Radiation Monitors. The disposition of the CTS requirement for a Channel Functional Test is addressed in DOC R.2. CTS Surveillance 4.3.3.1 references Table 4.3-3 for the applicable Modes and Frequencies of the required surveillances for each Radiation Monitor. Changes to the Frequencies or Modes specified on Table 4.3-3 are addressed in separate DOCs. The corresponding PAM ITS surveillances are specified in SR 3.3.3.1 and SR 3.3.3.2 and contain the applicable Surveillance Frequency. The ITS Surveillances do not refer to a Table and use the same Applicability as specified in the PAM ITS. The ITS Surveillances contain the appropriate guidance (notes) to assure they are applied correctly to each PAM Function. The CTS is

revised to conform to the ITS. This changes the CTS by deleting Table 4.3-3 and including the Frequency within each Surveillance Requirement.

The performance of the Channel Check and Channel Calibration surveillances provide assurance that the required PAM indications are maintained operable. The proposed change is acceptable because it continues to assure the appropriate surveillances are performed when required to assure the PAM indications are maintained operable. The proposed change only affects the presentation and format of the surveillance requirements. The proposed change is designated administrative because it does not introduce a technical change to the CTS.

A.9 CTS Table 3.3-6 contains the requirements for each Radiation Monitor. Table 3.3-6 lists the Radiation Monitors as "Instruments" and specifies the "Minimum Channels Operable" for each instrument. Table 3.3-6 lists Instrument 1.b "Containment Area" for the Containment Area Radiation Monitors and specifies (2) for the Minimum Channels Operable. In addition, Table 3.3-6 specifies Action 35 for the Containment Area Radiation Monitors. The differences between CTS Action 35 and ITS Action Conditions A, B, C, D, & F are addressed in separate DOCs. The corresponding ITS PAM Table 3.3.3-1 specifies the PAM instruments by "Function" with the "Required Channels" for each Function. The ITS Table specifies Action F for the Containment Radiation Monitors, but ITS Actions Conditions A, B, C & D are also applicable to the Containment Area Radiation Monitors. PAM ITS Table 3.3.3.1 specifies Function Number 10, Containment Area Radiation (High Range) and (2) Required Channels for the containment area Radiation Monitors. The CTS is revised to conform to the ITS. This changes the CTS Table 3.3-6 titles, numbering, and Actions specified for the Containment Area Radiation Monitors.

The purpose of CTS Table 3.3-6 is to present the requirements for each Radiation Monitor. The proposed change is acceptable because the corresponding PAM ITS Table continues to specify the requirements for the Containment Area Radiation Monitors in a similar manner as the CTS. The proposed change revises the Table titles, numbering, Actions, and Function title but the number of channels required operable remains unchanged. Differences in the CTS and ITS Actions are discussed in separate DOCs. As such, the proposed change represents a change in the presentation and format of the CTS Table. The proposed change is designated administrative because it does not introduce a technical change to the CTS.

A.10 CTS Action b addresses the condition of less than the minimum channels operable. The CTS Action requires that the "inoperable channel(s)" be restored to operable status. The corresponding ITS Action (Condition C) addresses two or more inoperable channels and requires that "all but one" channel be restored to operable status. The difference between the wording used to describe the Action conditions addressed by the CTS and ITS Actions is discussed in DOC A.2. However, both CTS Action b and the corresponding ITS Condition C address the condition of multiple inoperable channels. This DOC addresses the change in the CTS Action requirement to restore the "inoperable channel(s)" to the corresponding ITS Action requirement to restore "all but one" channel for the condition of multiple inoperable channels.

Actions state the associated conditions for which they are applicable. Both the CTS and ITS have Actions that address the condition of a single inoperable channel and the condition of multiple inoperable channels. In both the CTS and the ITS, the Action for multiple inoperable channels would no longer be applicable if all but one of the affected channels is restored to operable status. The Action that addresses the condition of a single inoperable channel becomes applicable when the condition changes such that only one channel is inoperable. In the CTS and in the ITS, the action addressing the condition of multiple inoperable channels is not applicable or appropriate for the condition of a single inoperable channel. The ITS however, provides a clarification in the Action for multiple inoperable channels by directly stating the requirement necessary to exit the Action condition (i.e., restore all but one channel to operable status). The clarification provided by the ITS is consistent with the way the Actions would be applied in the CTS. Therefore, the proposed change is acceptable because it provides a clarification to the Action requirements that enhances the understanding of the requirements without introducing a technical change to the CTS. The proposed change is designated administrative because it does not introduce a technical change to the CTS requirements.

ITS 3.3.4 Remote Shutdown Instrumentation
CTS 3.3.3.5 Remote Shutdown Instrumentation
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 4 – Relaxation of Required Action)* Unit 2 only. CTS LCO 3.3.3.5 requires instrumentation channels to be OPERABLE for the remote shutdown panel for various parameters. The Action requires "With the number of OPERABLE remote shutdown monitoring channels less than required by Table 3.3-9, either restore the inoperable channel to OPERABLE status within 7 days, or be in HOT SHUTDOWN within the next 12 hours." ITS LCO 3.3.4 states "The Remote Shutdown System Function shall be OPERABLE. ITS LCO 3.3.4 Action A states "One or more required Functions inoperable, restore required Function to OPERABLE status," with an allowed Completion Time of 30 days. ITS Action B is entered if the Required Action cannot be accomplished within the allowed time. ITS Condition B states "Required Action and associated Completion Time not met." Required Action B.1 requires the unit to be in MODE 3 in 6 hours and MODE 5 in 12 hours. The CTS is revised to conform to the ISTS. This changes the Unit 2 CTS by allowing 30 days instead of 7days for a remote shutdown Function to be inoperable before requiring the unit to shutdown. It should be noted that the BVPS Unit 1 CTS provides a 30 day allowed outage time, so this change does not apply to Unit 1.

The proposed change is acceptable considering that the operability of the Remote Shutdown System instrumentation is not a specific assumption of a design basis accident analysis and the proposed 30-day Completion Time continues to provide a sufficient limit on plant operation if a Remote Shutdown Function is not restored to operable status. As such, the 30-day Completion is acceptable due to the lower safety significance of the Remote Shutdown System instrumentation relative to systems and components necessary to mitigate design basis accidents and considering the low probability of an event occurring within this time that would require the use of the Remote Shutdown System (i.e., control room evacuation). The proposed change provides additional operational flexibility for equipment restoration without significantly affecting the safe operation of the plant. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.2 Not used.

L.3 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS surveillance requirement 4.3.3.5 states "Each remote shutdown monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-6." The CTS Source Range Channel Check requirements on Table 4.3-6 are modified by CTS Note 4 that states "Below P-6." The corresponding ITS LCO SR 3.3.4.1 states "Perform CHANNEL CHECK for each required indication instrumentation channel that is normally energized." ITS Table 3.3.4-1 in the ITS Bases lists the instrumentation channels for which ITS SR

3.3.4.1 applies but does not include any notes modifying the Source Range Instrument requirements. The CTS surveillance requirements are revised to conform to the corresponding ISTS surveillance requirement. This changes the CTS by specifying a CHANNEL CHECK be performed for each required channel only if the channel is normally energized. In addition, the proposed change eliminates the Note modifying the Source Range instrument Channel Check.

The proposed change is acceptable because it is necessary to account for instrumentation that may be de-energized by design when a channel check is required to be performed. Some equipment, such as the source range instrumentation, is designed to be de-energized at power. The performance of a channel check surveillance on de-energized instrumentation would not provide useful information for determining the operability of the affected instrumentation and is therefore, unnecessary to verify the LCO is being met. As such, the ISTS provides the general exception to the channel check surveillance for normally de-energized equipment. The proposed change effectively replaces the similar exception in the CTS (provided by Table 4.3-6 Note 4 for the Source Range Channel Check). The Source Range instrumentation operability requirements are based on when the Source Range is required to be energized (i.e., operable) below P-6. Above P-6, the source range instrumentation is normally de-energized to prevent damage to the detectors. Other nuclear instrumentation is relied on above P-6 to provide power indication. The ISTS surveillance exception for de-energized instruments effectively addresses the operability requirements for the source range instrumentation without the need of CTS Note 4 to modify the Channel Check requirement. As the ISTS implementation of this exception is more general than the specific CTS exception for source range indication and may address other de-energized indication channels, the proposed change is designated less restrictive.

L.4 *(Category 1 – Relaxation of LCO Requirements)* CTS LCO 3.3.3.5 states "The remote shutdown monitoring instrumentation channels shown in Table 3.3-9 shall be OPERABLE with readouts displayed external to the control room." CTS Table 3.3-9 specifies required channels for the Intermediate Range, Source and Intermediate Range Startup Rate and RHR Heat exchanger outlet temperature. CTS Surveillance Requirement 4.3.3.5 specifies the applicable Channel Checks and Channel Calibrations for these Remote Shutdown System instruments. The RHR HX outlet temperature requirements for both units are modified by notes referring to the RCS Section of the TS for operability guidance and surveillance requirements. The corresponding ITS LCO 3.3.4 requirements described in ITS Bases Table 3.3.4-1 does not list the Intermediate Range, Source and Intermediate Startup Rate, or the RHR heat exchanger outlet temperature as required instrument channels. The CTS is revised to conform to the ITS requirements. This changes the CTS by deleting the requirements pertaining to the Intermediate Range indication, Source and Intermediate Range Startup Rate indication and RHR heat exchanger outlet temperature indication (including notes) from the Remote Shutdown System TS.

The proposed change makes the list of required instrumentation more consistent with the Bases for the Remote Shutdown System TS, as described in the applicable ISTS 3.3.4 Bases discussion. As described in the ISTS Bases the purpose of the Remote Shutdown System TS requirements is to assure the indications and controls necessary to safely maintain the plant in Mode 3 from a

location outside the control room are available if needed. The CTS Remote Shutdown System requirements include instrumentation that is not necessary for safe operation in Mode 3.

The intermediate range indication and the source and intermediate range startup indication instruments are not necessary to monitor core reactivity in Mode 3. In Mode 3, the reactor is subcritical and changes in core reactivity may be adequately monitored by the source range indication instruments. The proposed change does not revise the CTS requirement for the operability of the source range neutron flux indication on the BVPS Unit 1 and 2 Emergency Shutdown Panels. The requirement for the operability of the source range indication is consistent with the corresponding ISTS Remote Shutdown requirements for monitoring core reactivity. As such, the proposed change is acceptable because it continues to assure core reactivity can be monitored from a location outside the control room to safely maintain the plant in Mode 3.

The proposed change also eliminates the CTS requirements for the RHR heat exchanger outlet temperature indication and associated notes. As discussed previously, the bases for the Remote Shutdown TS requirements is to maintain the plant in Mode 3. The RHR system is not required to safely maintain the plant in Mode 3. The CTS Remote shutdown System requirements have been modified to include the additional controls and indications (i.e., for the AFW system and SG steam dump valves) necessary to safely maintain the plant in Mode 3. Therefore, the CTS RHR indication and associated notes may be eliminated without adversely affecting the Remote Shutdown System capability to maintain the plant in Mode 3. As such, the proposed change is acceptable because it does not affect the capability to safely maintain the plant in Mode 3 and because of the addition of new TS requirements to assure the Remote Shutdown System capability to maintain the plant in Mode 3.

The proposed changes are designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L.5 Unit 2 only. *(Category 1 – Relaxation of LCO Requirements)* CTS LCO 3.3.3.5 specifies pressurizer pressure as one of the remote shutdown panel indications required operable. The corresponding ISTS requirements in Bases Table 3.3.4-1 specify that either pressurizer pressure or RCS wide range pressure indication be operable. As the Unit 2 emergency shutdown panel includes both pressurizer pressure and RCS wide range pressure, the Unit 2 CTS requirements are revised to conform to the ISTS requirements. Note, the Unit 1 emergency shutdown panel does not include RCS wide range pressure indication. This changes the Unit 2 CTS requirements by providing an option to use either pressure indication to meet the LCO requirements.

The purpose of the remote shutdown requirements is to assure that sufficient instrumentation and controls to safely maintain the unit in Mode 3 from a location outside the control room. The CTS remote shutdown panel requirement for pressurizer pressure indication provides the necessary indication for monitoring and maintaining the RCS pressure within acceptable limits in Mode 3. The proposed change is acceptable because the RCS wide range pressure indication is also available on the remote shutdown panel and provides an adequate indication of system pressure to safely maintain the plant in Mode 3. The

proposed change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

More Restrictive Changes (M)

M.1 CTS LCO 3.3.3.5 Actions specify required actions to be conducted within specific times. If the actions cannot be completed within the allowed time, the unit is required "to be in at least HOT SHUTDOWN (i.e., Mode 4) within the next 12 hours." The corresponding Actions of ITS LCO 3.3.4 Condition B state: "Required Action and associated Completion Time not met, be in Mode 3 in 6 hours and Mode 4 in 12 hours." The CTS is revised to conform to the ISTS. This changes the CTS Action by specifying the intermediate requirement that the plant be placed in Mode 3 within 6 hours as well as requiring the plant to be in Mode 4 within 12 hours.

The additional restriction of placing the plant in MODE 3 within 6 hours is acceptable because it assures the plant is shutdown in a timely manner if the requirements of the LCO are not met. The additional restriction is reasonable considering the time allowed to be in Mode 3 (6 hours) is based on operating experience, and allows the plant to reach the required Mode from full power conditions in an orderly manner without challenging unit systems or plant staff. As such, the proposed change provides additional assurance that the plant is operated in a safe manner without significantly increasing risk or placing an undue burden on equipment and plant personnel. Therefore, the proposed change does not adversely affect the safe operation of the plant. This change is designated more restrictive because the ITS specifies an additional requirement that is not contained in the CTS.

M.2 Not used.

M.3 CTS Surveillance Requirement 4.3.3.5 states "Each remote shutdown monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-6." The CTS Table specifies that a Channel Check for AFW Flow Rate be performed only upon a unit startup (S/U). The S/U frequency for this surveillance is modified by a note that states "Channel check to be performed in conjunction with Surveillance Requirement 4.7.1.2.7 following an extended plant outage." CTS 4.7.1.2.7 verifies AFW flow to the SGs after the Unit has been in Mode 5 or 6 for more than 30 days. The CTS surveillance note results in a Channel Check of the Remote Shutdown System AFW flow indication normally being performed once per refueling outage (or every 18 months). The corresponding ITS SR 3.3.4.1 requires the performance of a CHANNEL CHECK every month for each required instrumentation channel that is normally energized. The CTS is revised to conform to the ISTS surveillance requirement. This changes the CTS by replacing the requirement to perform an AFW flow channel check once per unit startup following an extended outage with the requirement for a channel check to be performed every month.

The CTS surveillance results in the required Channel Check for this particular Remote Shutdown System indication normally being performed on the same frequency as the required Channel Calibration (i.e., once per 18 months when the

AFW system may be in service feeding the SGs after an extended outage). As such, the CTS frequency for this Channel Check is inconsistent with the purpose of a Channel Check as stated in the ISTS Bases (i.e., "...it is key to verifying that the instrumentation continues to operate properly between each CHANNEL CALIBRATION"). The proposed change is acceptable because it results in more frequent channel checks being performed on this flow indication to provide additional verification of equipment operability between Channel Calibrations. The performance of a Channel Check surveillance does not require a specific value be obtained for the process variable being monitored. A Channel Check may be performed on energized instrumentation that indicates zero. The results of a surveillance performed on instrumentation indicating zero satisfy the requirements of the Channel Check as well as surveillances performed on instrumentation indicating a value greater than zero. The Channel Check surveillance only requires that instrument channels monitoring the same parameter should read approximately the same value. As such, the proposed change provides additional assurance that the Remote Shutdown System AFW flow indication remains operable between Channel Calibrations. The proposed change is designated more restrictive because the ITS specifies additional surveillances be performed that are not required in the CTS.

M.4 CTS 3.3.3.5 only contains requirements for monitoring instrumentation. CTS surveillance requirement 4.3.3.5 states "Each remote shutdown monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the Channel Check and Channel Calibration operations at the frequencies shown in Table 4.3-6." The CTS requirements only specify a Channel Check and Channel Calibration for the specified monitoring channels. The corresponding ISTS 3.3.4 includes requirements for control and transfer switches as well as monitoring instrumentation. ITS SR 3.3.4.3 provides requirements to verify the operability of the control and transfer switches. ITS SR 3.3.4.3 requires that each specified control circuit and transfer switch be verified capable of performing the intended function. The ITS SR must be performed every 36 months. The CTS is revised to conform to the ITS. This changes the CTS by adding specific control and transfer Functions to the Remote Shutdown System specification along with a surveillance requirement to verify the transfer and control switches can perform their intended function.

The proposed change is acceptable because the new requirements for the control functions provide additional assurance the Remote Shutdown System remains capable of providing the controls and indications necessary to safely maintain the unit in Mode 3 from a location outside the control room area.

Core reactivity is monitored by a Source Range channel that provides an indication changes to reactivity when shutdown. The boric acid pump control Function provides a means of inserting negative reactivity with the introduction of boric acid into the RCS via the charging system. Positive reactivity insertion capabilities are not required to safely maintain the plant in Mode 3.

RCS pressure control requires a pressurizer pressure or RCS wide range pressure indication and pressurizer heater control to maintain sufficient RCS pressure. If an overpressure condition were to occur, pressurizer code safety valves ensure RCS integrity is maintained without manual operator action.

The removal of decay heat from the RCS by the steam generators provides for fuel integrity. The removal of decay heat limits the fuel temperature and degradation of the fuel cladding. Thereby maintaining an acceptable core cooling geometry and fuel cladding boundary. Instrumentation channels providing RCS hot and cold leg temperature and steam generator pressure and level help to monitor decay heat removal process. AFW flow indication monitors makeup to the SG inventory. An atmospheric dump valve controls energy removed from the steam generator and thereby the removal of core decay heat. AFW pump and flow controls provide the necessary means to replenish steam generator inventory to ensure long term cooling of the RCS in conjunction with the atmospheric dump valve.

RCS inventory control requires pressurizer level indication and control functions for a charging pump and charging flow, as well as letdown flow control. These functions also provide the necessary requirements along with pressurizer heaters to ensure that the RCS can be maintained in a pressurized water state. Charging pump and flow controls also provides the necessary mechanism of boron flow path from the boric acid pumps to the RCS for reactivity control.

The requirements for Component Cooling Water, River Water (Unit 1), and Service Water (Unit 2) controls provide assurance that cooling water support systems are available to assist in maintaining the plant in Mode 3.

The addition of a specific surveillance requirement to verify the operability of control and transfer switches is necessary to ensure these functions can be transferred to and operated from the Emergency Shutdown Panels. As such, the proposed change provides additional assurance that the plant can be maintained in a safe, stable condition from outside the control room without adversely affecting the safe operation of the plant. This change is designated more restrictive because the ITS specifies additional requirements (for transfer and control switches) that are not required by the CTS.

Removed Detail Changes (LA)

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.3.3.5 states in part that the required channels "...shall be OPERABLE with readouts displayed external to the control room." ITS LCO 3.3.4 states "The Remote Shutdown System Functions shall be OPERABLE." The ITS does not contain a reference to readouts displayed external to the control room. The CTS is revised to conform to the ITS. This changes the CTS by moving the description of the display location to the associated ITS Bases.

The removal of this descriptive detail, which is related to the Remote Shutdown System design, from the TS is acceptable because this type of information is not necessary to be included in the TS to provide adequate protection of public health and safety. The ITS Bases describe the Remote Shutdown System which consists of the BVPS Emergency Shutdown Panels. The bases also describes the need for a Remote Shutdown System that allows the plant to be maintained in Mode 3 from a location outside of the control room. The TS retain the requirement for an operable Remote Shutdown System with the required functions (controls

and indications) detailed in the ITS Bases. As such, the TS continue to provide adequate assurance that the capability to safely maintain the plant in Mode 3 from outside the control room will be available when needed. This change is also acceptable because the removed information will be adequately controlled in the TS Bases. Changes to the Bases are controlled by the TS Bases Control Program which is specified in the administrative section (Section 5) of the ITS. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.2 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* The CTS LCO 3.3.3.5 refers to CTS Table 3.3-9 for the required instrumentation. ITS LCO 3.3.4 simply states that "The Remote Shutdown System Functions shall be OPERABLE." The detail from CTS Table 3.3-9 is moved to the ITS Bases and reformatted as ITS Table 3.3.4 –1. Technical changes to the CTS requirements on Table 3.3-9 are addressed by separate DOCs identified in the markup of Table 3.3-9. This DOC is only intended to address the movement of CTS requirements in Table 3.3-9 from the specification to the ITS Bases.

The removal of the CTS Table detail, which is related to the design features of the BVPS Emergency Shutdown Panels, from the TS is acceptable because this type of information is not necessary to be included in the TS to provide adequate protection of public health and safety. The TS retain the requirements for the Remote Shutdown System to be OPERABLE. The TS continues to require adequate system surveillance testing to assure continued operability. The descriptive details of the specific functions, controls and indications required for system operability are contained in the associated ITS Bases. The proposed change is consistent with the ISTS format where the description of system operability is included in the associated TS Bases. This change is also acceptable because the removed information will be adequately controlled in the TS Bases. Changes to the Bases are controlled by the TS Bases Control Program specified in Section 5 of the TS. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure changes to the TS Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the TS.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be *marked on each CTS page. Marked or unmarked, all A.1 changes are identified* by a single annotation of A.1 at the top of the first page of each CTS. These

changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 CTS LCO 3.3.3.5 states "The remote shutdown monitoring instrumentation channels shown in Table 3.3-9 shall be OPERABLE with readouts displayed external to the control room." ITS LCO 3.3.4 states "The Remote Shutdown System Functions shall be OPERABLE." The CTS is revised to conform to the ISTS. This changes the CTS by referencing the required Remote Shutdown instrumentation by "Functions" instead of "channels". The relocation of CTS Table 3.3-9 to the ITS Bases is discussed in a less restrictive DOC associated with the markup of Table 3.3-9. This DOC only addresses the reformatting of the CTS LCO statement to address Remote Shutdown System Functions.

This change is acceptable because technical requirements for the individual instrument channels associated with each Remote Shutdown System Function continue to be specified in the ITS Bases Table that lists the required Remote Shutdown System Functions. In the ITS, the required channels are grouped by Remote Shutdown System Function and the Function is referenced in the LCO. Each required channel specified for a particular Function must be operable for the Function to be operable. As such, the proposed change only represents a change in the format and presentation of the CTS requirements. Therefore, the change is designated as administrative because the technical requirements for individual channels continue to be specified in the corresponding ITS Table.

A.3 CTS LCO 3.3.3.5 Action states "With the number of OPERABLE remote shutdown monitoring channels less than required by Table 3.3-9, either: Restore the inoperable channel to OPERABLE status within 7 days, or be in HOT SHUTDOWN within the next 12 hours." ITS LCO 3.3.4 Action A requires "One or more required Functions inoperable. Restore required Function to OPERABLE status in 30 days." Condition B states "Required Action and associated Completion Time not met be in MODE 3 in 6 hours and be in MODE 4 in 12 hours." This changes the CTS requirements for the remote shutdown by stating the requirements in the ITS format (i.e., referring to Functions instead of channels). The change from 7 days to 30 days for restoring an inoperable channel to OPERABLE status is addressed by a less restrictive DOC and the requirement to be in MODE 3 within 6 hours is addressed by a more restrictive change. This DOC is intended to address the change in terminology used in the Action statement.

This change is acceptable because technical requirements for the individual instrument channels associated with each Remote Shutdown System Function continue to be specified in the ITS Bases Table that lists the required Remote Shutdown System Functions. In the ITS, the required channels are grouped by Remote Shutdown System Function and the Function is referenced in the LCO

and Actions. Each required channel specified for a particular Function must be operable for the Function to be operable. Actions in the ITS are still initiated based on inoperable channel(s) (for a given Function) the same as in the CTS. As such, the proposed change only represents a change in the format and presentation of the CTS requirements. Therefore, the change is designated as administrative because the technical requirements for individual channels continue to be specified in the corresponding ITS Table.

A.4 The CTS 3.3.3.5 Action specifies that "With the number of OPERABLE remote shutdown monitoring channels less than required...." The corresponding ITS 3.3.4 Action states "One or more required Functions inoperable." In addition, the ITS Action is modified by a Note, which states "Separate Condition entry is allowed for each Function." The CTS is revised to be consistent with the ISTS. This changes the CTS by the addition of the ISTS note allowing separate condition entry for each inoperable Function. The change from "channel" to "Function" in the Action requirements is addressed in another DOC for changes to the Action requirements.

The affected CTS Action is written to address more than one inoperable channel. If more than one channel is inoperable, the CTS Action would be entered separately for each inoperable channel. The proposed change represents the addition of a format convention of the ISTS that provides consistent guidance for how this type of Action is applied. However, the ISTS guidance is consistent with how the CTS Action is currently applied. The CTS Action is specifically written to address multiple inoperable channels. Actions intended to address only one inoperable component are specifically written as "one inoperable...." As such, the addition of the ISTS Note is considered a clarification of the CTS Action that does not modify the technical requirements of the CTS. The proposed change is made to adopt the format conventions of the ISTS for Actions that allow for multiple inoperable components. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.5 CTS 4.3.3.5 states "Each remote shutdown monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the Channel Check and Channel Calibration operations at the frequencies shown in Table 4.3-6." A note in CTS Table 4.3-6 modifies the Source Range surveillance requirements. The Note states "Operability required in accordance with Specification 3.3.1.1." Table 4.3-6 does not specify a Channel Calibration for the Source Range indication. However, Specification 3.3.1.1 requires a refueling interval (18 month) Channel Calibration for the Source Range instrumentation with an exception for neutron detectors. The remaining Remote Shutdown channels on CTS Table 4.3-6 have a frequency requirement for the Channel Calibration listed as R (Refueling or 18 months). ITS SR 3.3.4.2 states "Perform Channel Calibration for each required indication instrumentation channel." The Frequency for the ISTS Channel Calibration surveillance is 18 months. The ISTS Channel Calibration surveillance requirement is modified by a note that states "Neutron Detectors are excluded from Channel Calibration". The CTS surveillance is revised to conform to the ISTS surveillance. This changes the CTS by including a separate 18-month Channel Calibration surveillance with a specific exception for neutron detectors. In addition the change adds the 18-month Channel Calibration requirement to the Remote Shutdown System Source Range indication.

The proposed change is acceptable because the requirement for periodic Channel Calibrations at an 18-month frequency remains unchanged. The Note that modifies the ITS Channel Calibration is also acceptable because a neutron detector is not an adjustable device and can not technically be included in a Channel Calibration as defined in the TS (Section 1.0 Definitions). The addition of the ITS note provides a clarification consistent with the existing CTS note (note 2 in Table 4.3-6) associated with the source range neutron flux that specifies the operability of this instrumentation be in accordance with Specification 3.3.1.1 (Reactor Trip System). In Specification 3.3.1.1, the source range instrument 18-month Channel Calibration requirements are modified by the same note (neutron detector exclusion) as the ISTS SR 3.3.4.3. The proposed Remote Shutdown System Channel Calibration surveillance, with the exception for neutron detectors, eliminates the need for the CTS note modifying the source range indication requirements and allows the 18-month Channel Calibration surveillance to be directly assigned to the source range instrumentation (consistent with the applicable surveillance in CTS 3.3.1.1). As such, the proposed change provides a more direct clarification of the surveillance requirements applicable to the source range instrumentation than the CTS reference to Specification 3.3.1.1. However, the CTS requirement for an18-month channel calibration of the source range instrumentation remains unchanged. This change is designated as administrative because the technical requirements of the CTS are not changed.

A.6 CTS surveillance 4.3.3.5 requires that "Each remote shutdown monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-6. The corresponding ISTS surveillance requirements (SR 3.3.4.1 and SR 3.3.4.3) specify a Channel Check and Channel Calibration for each Remote Shutdown System instrument channel but do not reference a Table. The CTS surveillance is revised to conform to the corresponding ISTS surveillance requirements. Technical changes to the CTS surveillance requirements are identified in the markup of Table 4.3-6 and in the inserted ISTS surveillances. This DOC is intended to address the replacement of the single CTS surveillance and associated Table 4.3-6 with the individual ISTS surveillances for Channel Check and Channel Calibration.

The proposed change involves the reformat and simplification of the CTS surveillance requirements to conform to the ISTS format. CTS Table 4.3-6 is eliminated and the single CTS surveillance is replaced by two ITS surveillances. The proposed change is acceptable because the requirement to perform the CTS surveillances that verify the Remote Shutdown System operability are retained in the new ITS SR 3.3.4.1 and SR 3.3.4.2. Thus, the proposed change continues to provide adequate assurance the required instrumentation is maintained operable in a manner similar to the CTS. The proposed change does not introduce a technical change to the CTS requirements (except for those changes addressed by other DOCs). This DOC only addresses the change in format and presentation of the requirements. As such, this change is designated as administrative because the changes to the format and presentation of the CTS requirements do not involve technical changes.

ITS 3.3.5 Loss of Power Diesel Generator Start and Bus Separation Instrumentation

CTS 3.3.2.1 Engineered Safety Feature Actuation System Instrumentation

DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 Unit 2 only. *(Category 3 – Relaxation of Completion Time and Category 4 Relaxation of Required Action)* The Unit 2 ESFAS Functional Unit 6.a.1 (Undervoltage - Trip Feed) in Table 3.3-3 is assigned Action Statement 33 in the CTS. This Unit 2 loss of power function consists of two channels. CTS Action statement 33 is applicable to instrument functions that consist of only a single channel (i.e., the corresponding Unit 1 instrument Function). Even though the corresponding Unit 1 function consists of 1 channel and the Unit 2 function consists of two channels, during the initial licensing of Unit 2, the Unit 2 CTS function 6.a.1 was assigned Action statement 33 to maintain consistency with the Unit 1 technical specifications. This resulted in an overly conservative Action being assigned to this Unit 2 instrument Function.

The proposed change revises the Actions for the Unit 2 ESFAS Functional Unit 6.a.1 (Undervoltage - Trip Feed) in CTS Table 3.3-3 to be consistent with the other loss of power instrument functions with two required channels. The CTS Action statement 33 specifies:

> "With the number of OPERABLE Channels one less than the Total Number of Channels, the Emergency Diesel Generator associated with the 4kv Bus shall be declared inoperable and the ACTION Statements for Specifications 3.8.1.1 or 3.8.1.2, as appropriate, shall apply.

The applicable CTS Action does not allow for placing the inoperable channel in trip or provide an Action for a second inoperable channel as does CTS Action 34 which is applicable to the other loss of voltage functions with two available channels. The Unit 2 ESFAS Functional Unit 6.a.1 (Undervoltage - Trip Feed) in CTS Table 3.3-3 is not different from the other two channel functions for which CTS Action 34 is applicable. Therefore, the action applicable to Unit 2 Functional Unit 6.a.1 (Undervoltage - Trip Feed) is revised to be consistent with the proposed ITS 3.3.5 Actions for the other loss of voltage instrument functions with two channels (i.e., ITS Conditions B, C, and E). ITS Action Conditions B, C, and E correspond to CTS Action 34 for two channel functions. The changes to CTS Action 34 that result in ITS Conditions B, C, and E are addressed in the markup of CTS Action 34. The proposed ITS 3.3.5 Actions for two channel loss of voltage instrument Functions specify:

> Condition B: One or more Functions with one channel per bus inoperable. B.1 Place channel in trip in 6 hours.

Action B.1 is modified by a note that states The inoperable channel may be bypassed for up to 4 hours for surveillance testing of other channels provided the corresponding instrument channels, electrical bus, and DG in the other train are OPERABLE.

Condition C: One or more Functions with two channels per bus inoperable. C.1 Restore one channel per bus to OPERABLE status in one hour.

Condition E: Required Action and associated Completion Time not met. E.1 Enter applicable Condition(s) and Required Action(s) for the associated DG made inoperable by LOP DG start or Bus Separation instrumentation immediately.

The proposed change conforms more closely with the ISTS Actions for this type of instrumentation and allows a more reasonable time (6 hours) to take Action with a single inoperable loss of power instrument channel. The immediate CTS Action to declare the DG inoperable is overly conservative. The proposed time to place the channel in trip is consistent with the time allowed in the ISTS to place a channel in trip and allows this activity to be conducted in a safe and controlled manner. This allowance is acceptable because once placed in the tripped condition, the affected instrument channel is performing its intended safety function and there is no reason to declare the affected DG inoperable. In addition, the proposed change provides an Action for the condition of two inoperable channels that requires one channel to be restored within an appropriately short time (1 hour). The addition of this Action provides a sufficiently short time to correct an instrument problem before the DG must be declared inoperable. The proposed Action for two inoperable channels reduces the potential for declaring the DG inoperable by allowing a minimal amount of time to correct the affected bus instrumentation before the DG must be declared inoperable. In the event that an Action is not completed within the required Completion Time the proposed Actions also include a default condition similar to the CTS requirements that specifies the associated DG be declared inoperable. In addition, the proposed Actions contain a note that allows the inoperable channel placed in trip to be bypassed for up to 4 hours provided the other train (relays, bus, and DG) is operable. This provision of the proposed Actions would allow for routine calibrations to be accomplished on the remaining operable channel without declaring the associated DG inoperable. Considering that the note requires the other train to be operable and restricts the time allowed in this condition to 4 hours and the fact that the instrument function (i.e., bus separation) may be accomplished manually, the proposed change continues to assure the plant is operated in a safe manner while avoiding the necessity of declaring the associated DG inoperable in order to complete routine instrument calibrations. The proposed change is designated less restrictive as less stringent Actions are applicable in the ITS than the CTS.

L.2 *(Category 3 – Relaxation of Completion Time)* CTS Action 33 applies when one loss of power channel is inoperable and requires that the associated DG be declared inoperable immediately. The corresponding ITS Action Condition D is also applicable to a single inoperable channel but allows one hour to restore the inoperable channel to operable status prior to declaring the associated DG

inoperable. The CTS Action is revised to conform to ITS Action Condition D (similar to ISTS Action Condition B). This changes the CTS by providing an additional hour to restore the inoperable channel.

CTS Action 33 is applicable to the loss of power functions that consist of a single channel (except for the Unit 2 CTS Functional Unit 6.a.1 (Undervoltage - Trip Feed) discussed in DOC L.1). As such the loss of power function provided by this instrumentation is lost when the single channel becomes inoperable. In ISTS Condition B, the ISTS allows one hour for the condition where a loss of function may exist.

The proposed change allows a limited time to restore the inoperable loss of power instrument channel before the loss of power instrumentation Actions require the associated DG Actions to be entered. The Actions applicable to the affected DG provide additional restoration time and assure the DG in the opposite train is maintained operable. The proposed change is acceptable because it does not significantly affect the safe operation of the plant under the specified Condition, considering the availability of the redundant DG and trains of electrical buses, the capability to manually separate buses or start the affected DG, and the relatively short period of time allowed by the proposed change before the associated DG Actions must be entered. Entering the associated DG Actions does not significantly improve the existing plant condition, therefore, delaying this Action for one hour to more properly assess the inoperable loss of power instrumentation and proceed in a more controlled manner does not significantly increase plant risk and is appropriate and consistent with the ISTS Actions for similar conditions (i.e., ISTS 3.3.5 Action Condition B). In addition, the proposed change reduces the potential for declaring a DG inoperable unnecessarily due to insufficient time to assess the condition of the affected instrumentation. This change is designated as less restrictive because additional time is allowed to restore parameters to within the LCO limits than was allowed in the CTS.

L.3 *(Category 3 – Relaxation of Completion Time)* CTS Action 34 requires that "With the number of OPERABLE channels one less than the Minimum Number of Channels, place the inoperable channel in the tripped condition within 1 hour...." The corresponding ISTS Action Condition A (ITS Condition B) provides a 6 hour completion time to place a channel in trip. The CTS Action is revised to conform to the ISTS. This changes the CTS by providing additional time to place an inoperable channel in trip.

CTS Action 34 is applicable to the bus separation loss of power instrument functions that consist of two channels per bus arranged in a two-out-of-two trip logic that prevents a spurious trip of a single channel from separating the associated emergency bus from offsite power. The BVPS design of this instrumentation is not single failure proof for each electrical bus in a given train and relies on the other train of electrical busses and DG for redundant protection. Therefore, CTS Action 34 allows plant operation to continue with one inoperable channel placed in the trip condition. However, CTS Action 34 only allows 1 hour to place a channel in trip. Failure to place the channel in trip in 1-hour results in the Action requirement to enter the applicable Actions of the associated DG made inoperable by the affected loss of power instrumentation. As such, the proposed change only results in a small additional delay, to place an inoperable channel in trip, prior to declaring the associated DG inoperable. The proposed change

allows a more reasonable time in which the required Action may be accomplished in a more controlled and safe manner without challenging plant personnel and introducing the potential for error. The 6-hour allowance to place a channel in trip is a consistent and recognized time frame to perform this type of Action throughout the ISTS instrumentation specifications. In addition, the proposed change reduces the potential for declaring a DG inoperable unnecessarily due to insufficient time to perform the required Action in a safe and controlled manner. As such, the proposed change is acceptable considering the relatively short period of time involved, the availability of the redundant train of electrical busses and DG to provide emergency power, the low probability of an event that would require this instrumentation to function within the proposed time to place the channel in trip, the capability to manually separate the affected buses if necessary, and the reduction in risk due to insufficient time to perform the action. This change is designated as less restrictive because additional time is allowed to perform Actions than was allowed in the CTS.

L.4 *(Category 4 Relaxation of Required Action)* CTS Action 34 requires that an inoperable loss of power channel be placed in the trip condition and allows operation to continue with the affected channel in trip. The corresponding ITS Action Condition B is similar except for the Required Action Note that states, "The inoperable channel may be bypassed for up to 4 hours for surveillance testing of other channels provided the corresponding instrument channels, electrical bus, and DG in the other train are OPERABLE." The CTS is revised to conform to the ITS. The proposed change provides an allowance to perform routine surveillance testing of the remaining operable channel on an electrical bus when one of the two channels on that bus is in trip.

CTS Action 34 is applicable to the bus separation loss of power instrument functions that consist of two channels per bus arranged in a two-out-of-two trip logic that prevents a spurious trip of a single channel from separating the associated emergency bus from offsite power. The BVPS design of this instrumentation is not single failure proof for each electrical bus in a given train and relies on the other train of electrical busses and DG for redundant protection. Therefore, CTS Action 34 allows plant operation to continue with one inoperable channel placed in the trip condition.

However, the CTS Action does not provide a means to functionally test the remaining operable channel when required by the technical specification surveillances. Functional tests are required to be performed periodically online to verify the trip capability of the loss of power instrument channels. With one of the two channels in trip, the remaining channel can not be tested (tripped) without causing an inadvertent bus separation. Failure to perform a required surveillance within the specified interval results in the remaining loss of power channel on that bus being declared inoperable. The resulting Actions would require one inoperable channel to be restored to operable status within one hour or that the associated DG be declared inoperable. As such, the CTS would require the surveillance be performed within the one hour Action time for two inoperable channels or that the surveillance be performed after the associated DG is declared inoperable.

The proposed change provides a necessary allowance to complete the required surveillance testing without declaring additional equipment inoperable. The

proposed change is consistent with similar notes used throughout the ISTS instrument specifications (including ISTS 3.3.5 Action A.1) for this purpose.

The BVPS loss of power instrument design consists of two channels per bus and requires that both channels trip to separate the emergency bus from off site power. Therefore, when one channel is bypassed the instrument function is made unavailable. The proposed note contains the additional requirement to verify the other train operable before bypassing a channel which provides assurance that the redundant safety function remains available. The proposed Note is similar to several such notes used in the ISTS RTS and ESFAS Actions that allow one entire actuation logic train of RTS or ESFAS to be bypassed provided the other train is operable. The allowance to bypass one channel and render the instrument function unavailable to perform required testing is acceptable due to the short time allowed by the note (4 hours) and the provision of the Note that requires the other train to be operable. As such, the time in which the affected instrumentation is unavailable is sufficiently limited to minimize risk (based on the acceptability of bypassing an entire train of RTS and ESFAS for the same amount of time) and that the capability to perform the required safety function is preserved by requiring the other train to be operable. In addition, considering that the most probable outcome of performing any surveillance is that the affected plant equipment is found to be operable, requiring the affected channel or DG to be declared inoperable for failure to perform the required surveillance is overly conservative and unnecessary to assure the operability of the affected instrument channel. This change is designated as less restrictive because less stringent Actions are specified in the ITS than in the CTS.

L.5 *(Category 6- Relaxation of Surveillance Requirement Acceptance Criteria)* The CTS surveillances for the loss of power Functions specified in Table 4.3-2 require a quarterly Channel Functional Test (CFT). The corresponding ITS surveillance requirement for this ESFAS Function (SR 3.3.5.5) specifies a quarterly Trip Actuating Device Operational Test (TADOT). The ITS TADOT requirement is modified by a note that specifies that verification of setpoints is not required. The CTS surveillance is revised to conform to the ITS. This changes the CTS by adding a specific exception for setpoint verification when performing the quarterly functional test. The difference between the ITS TADOT defined term and the CTS CFT defined term is addressed in the DOCs associated with TS Section 1.0, Definitions. This DOC is only intended to address the addition of the ITS Note that takes exception to the verification of setpoints.

The relay instrumentation associated with this Function consists of simple contacts operated by an electro-mechanical or digital relay that is not located where it is subject to an adverse environment. The associated instrument signal from the relay is not processed through complicated circuitry consisting of a variety of electronic components subject to age or environmental affects that may contribute to significant setpoint drift. In addition, setpoint verification requires removal of the associated relay which reduces the availability of the protection function, increases equipment wear, and introduces the potential for error by requiring repeated removal and installation of the equipment. It should also be noted that the addition of the proposed exception to the verification of setpoints is consistent with the requirements of the CTS CFT definition which also does not require setpoint verification.

Based on the discussion above and the fact that the operation of the affected relays and contacts continue to be tested every quarter and that the setpoints continued to be verified periodically every 18 months by the required channel calibration, the proposed change is acceptable. The proposed change provides adequate assurance that the affected instrumentation is maintained operable and does not adversely affect the safe operation of the plant. The proposed change is designated less restrictive because the ITS requirement has a more explicit exception in the surveillance requirement than the CTS requirements stated in the CFT definition.

More Restrictive Changes (M)

M.1 The CTS requires the loss of power instrumentation operable in Modes 1-4. ISTS 3.3.5 requires this instrumentation operable in Modes 1-4 and when the associated DG is required to be operable by LCO 3.8.2, "AC Sources - Shutdown. ITS LCO 3.8.2, AC Sources Shutdown, requires one DG to be operable in Modes 5 and 6 (both units) and when moving irradiated fuel (Unit 1) or recently irradiated fuel (Unit 2). The CTS Applicability for the loss of power instrumentation is revised to conform to the ISTS Applicability. This changes the CTS by requiring the loss of power instrumentation to be operable when the associated DG is required operable by ITS LCO 3.8.2.

The purpose of the ISTS requirement for the loss of power instrumentation to be operable when the associated DG is required operable by LCO 3.8.2 is to provide additional assurance of reliable emergency power to support core cooling (RHR) operation during normal shutdown conditions and to support the operation of any equipment that may be necessary to mitigate the effects of a fuel handling accident. The proposed change to the CTS is acceptable because it provides additional assurance of reliable emergency power during shutdown conditions. As such, the proposed change helps to ensure the capability to maintain adequate core cooling and to mitigate a fuel handling accident. Therefore, the proposed change does not adversely affect the safe operation of the plant. The proposed change is designated more restrictive because the ITS contains more stringent requirements for the loss of power instrumentation than the CTS.

Removed Detail Changes (LA)

LA.1 *(Type 1 - Removing Details of System Design and System Description, Including Design Limits)* The Channels To Trip column in CTS Table 3.3-3 is deleted consistent with the ISTS. The corresponding ITS 3.3.5 Table 3.3.5-1 does not include this information. This information is included in the ITS Bases.

The proposed change is acceptable because the Channels To Trip column in CTS Table 3.3-3 contains information describing the design of the ESFAS which is not required to ensure the ESFAS system is maintained operable. The ISTS "Required Channels" specifies the necessary channels to maintain the ESFAS operable and the ISTS Actions provide the appropriate measures when the Required Channels are not met.

ESFAS design features are described in the UFSAR. Changes to the plant design as described in the UFSAR are subject to the review requirements of 10 CFR 50.59. In addition, the requirements for the ESFAS design are also controlled by the required industry standards (IEEE 279, etc.), federal regulations (General Design Criteria), and specific NRC requirements and guidelines pertaining to the

ESFAS. Changes to these plant design requirements are in turn controlled in accordance with the Quality Control Programs that are required by federal regulations (10 CFR 50.54). Also, this change is acceptable because the design description information will be retained within the ITS bases for each ESFAS Function and changes to the ITS Bases are controlled by the TS Bases Control Program specified in the Administrative Controls Section of the TS. This program provides for the evaluation of changes to ensure the Bases are properly controlled and that prior NRC review and approval is requested when required. This change is designated as a less restrictive removal of detail change because design detail is being removed from the TS.

LA.2 Unit 1 only. *(Type 3 – Procedural Details for Meeting Tech Spec Requirements)* Unit 1 CTS Table 3.3-3 for function 6.a.2 in the Allowable Value column states the following, " ≥ 71.2% of rated bus voltage with a < 0.9 second time delay (includes auxiliary relay times)." The corresponding ITS Allowable Value specified for this Unit 1 instrument function is ≥ 2962 V with a time delay of < 0.9 second. The CTS Allowable Value is revised to conform to the ITS. The conversion from % rated bus voltage to a specific voltage is a format change that is addressed by DOC A.1. This DOC is intended to address the removal of the descriptive text (includes auxiliary relay times). As such, the CTS is revised by moving the requirement that the time delay includes auxiliary relay times from the Allowable Value to the ITS Bases.

The removal of this descriptive information, which describes how the TS requirements must be met, from the TS is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The TS still retain the requirement for Channel Calibration testing of the affected instrument Function. The Channel Calibration verifies the correct instrument setpoint including any required time delay. The proposed change moves the description details of the time delay requirement to the Bases. As such, the proposed change is also acceptable because the removed information will be adequately controlled in the TS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the TS. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to meeting the TS requirements is being removed from the TS.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These

changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 The CTS Table 3.3-3 table heading titled "Total Number of Channels" is revised to be "Required Channels" consistent with the corresponding ITS Table 3.3.5-1 Table headings. In addition, the Minimum Channels Operable column of CTS Table 3.3-3 is deleted consistent with the content of the corresponding ITS Table 3.3.5-1.

The proposed change is acceptable because the revisions described above do not result in technical changes to the number of instrument channels required operable or the applicable Actions when the required channels are not met. All Actions for an inoperable instrument channel in the ISTS are based on the Required Channels specified for the affected function. The new ISTS Action Conditions assigned to each Instrument Function will specify the appropriate action when one or more "Required" instrument channels are inoperable. The minimum channels column used in the CTS to identify the number of operable channels for which continued operation is permissible is no longer used or required in the TS. The ISTS Actions encompass the concept of the minimum required channels, i.e., the plant would be required to be placed in a Mode or Condition outside the Applicable Mode when the minimum number of channels for continued operation is not met. The ISTS Actions accomplish this without a specific reference to the minimum required channels. As such the proposed changes described above do not introduce a technical change to the CTS requirements. In addition, any technical changes to the CTS Actions associated with the ESFAS instrument functions are identified in the markup of those Actions and addressed in the DOCs associated with the changes to the CTS Actions. This Doc is intended to address the reformat of the CTS Table 3.3-3 to conform to the corresponding ITS Table 3.3.5-1. Therefore, this change is designated administrative.

A.3 Function 6 on Table 3.3-3 in the CTS ESFAS specification contains the "Loss of Power" instrumentation requirements. Two types of instrumentation are listed under Function 6 in CTS Table 3.3-3. Function 6 contains requirements for the instrumentation associated with the DG start on loss of voltage (DG start instrumentation) and for the instrumentation associated with protecting the emergency busses from undervoltage or degraded voltage conditions (bus separation instrumentation). The corresponding ISTS requirements for this type of instrumentation are contained in proposed ITS 3.3.5, "Loss of Power (LOP) Diesel Generator (DG) Start and Bus Separation Instrumentation". As such, the CTS requirements on Table 3.3-1 are moved to ITS 3.3.5 Table 3.3.5-1. In addition to moving the CTS requirements, the CTS requirements are reorganized into the subcategories of "Loss of Voltage" and "Degraded Voltage". The

individual instruments listed on ITS Table 3.3.5-1 are further labeled as "DG Start" or "Bus Separation" consistent with the instrumentation function.

The proposed re-organization of the CTS instrument functions on ITS Table 3.3.5-1 is consistent with the actual function performed by the instrument and more clearly identifies each of the Loss of Power instruments listed on the table. The proposed change is acceptable because it only involves a format change and does not alter the technical requirements associated with each instrument. Therefore, the proposed format changes better describe each instrument and are consistent with the current licensing basis for the affected instrumentation. The proposed changes are designated administrative and are acceptable because they do not result in technical changes to the CTS requirements.

A.4 The CTS Action statements #33 and #34 applicable to the Loss of Power Instrumentation are replaced by the corresponding ITS Action Conditions (i.e., A, B, C, D and E). All the proposed ITS Action Conditions, with the exception of Condition A, are derived from the corresponding CTS Action statements (#33 and #34). Changes to the CTS Action statements to derive the ITS Action Conditions are addressed in the markup and DOCs associated with CTS Actions 33 and 34. However, there is no corresponding CTS Action statement for ITS Condition A. ITS Action Condition A provides direction to the technical specification user to enter the applicable Action Conditions specified in Table 3.3.5-1. ITS Action Condition A states, "One or More Functions with one or more required channels inoperable. Enter the applicable Condition(s) referenced in Table 3.3.5-1 for the affected channel(s) immediately". ITS 3.3.5 Condition A is similar to Action Condition A in the ISTS RTS and ESFAS specifications and is necessary due to the use of the Table format (Table 3.3.5-1) to specify the individual requirements (including the applicable Actions) for each instrument function addressed by ITS 3.3.5. As such, the addition of ITS 3.3.5 Action Condition A is a requirement of the ISTS Table format and is necessary to more closely conform to the ISTS that use similar Tables (i.e., ISTS 3.3.1 and ISTS 3.3.2). The use of ITS 3.3.5 Action Condition A does not introduce a technical change to the CTS requirements. The use of ITS Table 3.3.5-1 and Action Condition A is a change in format and presentation only. Therefore, the addition of ITS Action Condition A is designated administrative.

A.5 CTS Action 33 specifies in part "with the number of OPERABLE Channels one less than the Total Number of Channels...." The corresponding ITS 3.3.5 Action Condition D is applicable to "one or more Functions with one channel per bus inoperable." This portion of CTS Action 33 is revised to be consistent with the corresponding ITS Action Condition D. This changes the CTS by reformatting the presentation of Action statement 33.

The proposed change is acceptable because it continues to address the same condition (i.e., one inoperable channel). The ITS Action is stated in terms of the number of inoperable channels instead of how many channels less than the total number are operable. The result is the same. The ITS Action is based on the "required channels" specified in Table 3.3.5-1. The use of "required channels" specified in Table 3.3.5-1 does not result in a technical difference from the term "total number of channels" used in the CTS Action 33. The number of channels remains the same. As such the proposed changes to the CTS Action 33 involve only the format and presentation of this information. The proposed change is

designated administrative because it does not involve a technical change to the CTS Action statement.

A.6 CTS Action 34.a states in part that "With the number of OPERABLE channels one less than the Minimum Number of Channels, place the inoperable channel in the tripped condition...." The corresponding ITS Action Condition B states that with "One or more Functions with one channel per bus inoperable place the channel in trip." The CTS Action is revised to conform to the ITS Action Condition. This changes the CTS by reformatting the presentation of Action statement 34.a.

The proposed change is acceptable because it continues to address the same condition (i.e., one inoperable channel on a bus). The ITS Action is stated in terms of the number of inoperable channels instead of how many channels less than the total number are operable. The result is the same. The ITS Action is based on the "required channels" specified in Table 3.3.5-1. The use of "required channels" specified in Table 3.3.5-1 does not result in a technical difference from the term "minimum number of channels" used in the CTS Action. The total number of channels required operable remains the same. As such the proposed changes to the CTS Action involve only the format and presentation of this information. The proposed change is designated administrative because it does not involve a technical change to the CTS Action statement.

A.7 CTS Actions 33 and 34.a and 34.b contain default requirements to declare the associated DG inoperable and apply the Required Actions of the DG specification if the other required Actions specified in CTS Actions 33 and 34 are not met. ITS 3.3.5 contains one default Action Condition (E) that is applicable when any Required Action and associated Completion Time is not met. ITS Condition E specifies that the applicable Condition(s) and Required Action(s) for the associated DG made inoperable by the LOP DG start or bus separation instrumentation be entered. The CTS default Actions are revised to conform with ITS Action Condition E. This changes the CTS by consolidating the three different CTS default Actions into a single ITS Action Condition.

The proposed change is acceptable because the results of the ITS Action Condition and the CTS Actions are the same (i.e., to enter the required Actions of the associated DG made inoperable by the loss of power instrumentation). The proposed change does not introduce a technical difference to the CTS requirements. The proposed change only involves a change in the presentation of the CTS requirements such that they conform to the ISTS format. The proposed change is designated administrative because it does not result in a technical change to the CTS.

A.8 CTS Action 34.b requires that "with the number of OPERABLE channels two less than the Minimum Number of Channels, restore at least one of the two channels to OPERABLE status and place the other in the tripped condition within 1 hour...." The corresponding ITS Action Condition C specifies that with "One or more Functions with two channels per bus inoperable. Restore one channel per bus to OPERABLE status in 1 hour. The CTS Action is revised to conform to the ITS Action. This changes the CTS Action by stating the applicable Action condition in terms inoperable channels instead of operable channels, eliminating the reference to the minimum number of channels, and eliminating the requirement to place the other channel in the tripped condition.

The proposed change is acceptable because it continues to address the same condition (i.e., two inoperable channels). The ITS Action is stated in terms of the number of inoperable channels instead of how many channels less than the minimum number are operable. The result is the same. The ITS Action is based on the "required channels" specified in Table 3.3.5-1. The use of "required channels" specified in Table 3.3.5-1 does not result in a technical difference from the term "minimum number of channels" used in the CTS Action 34.b. The number of channels remains the same. As such, the reference to the minimum number of channels is no longer required.

Similarly, the requirement to place the other channel in trip is also eliminated from CTS Action 34.b as it is not required to be repeated in this Action (this Action requirement is first stated in CTS Action 34.a). The ITS Action Conditions B (one inoperable channel - place the channel in trip) and C (two inoperable channels - restore one channel to operable status in one hour) work together for the applicable instrument Functions to accomplish the same result as CTS Action 34.b. ITS Action Conditions B and C remain applicable at the same time, so there is no need to repeat the requirement to place one channel in trip as is done in CTS Action 34.b. As such, this change represents a change in the format and presentation of the CTS Actions to conform to the ITS and the elimination of the requirement to place the other channel in trip from CTS 34.b does not introduce a technical change to the CTS.

The changes described above are designated administrative because they do not result in a technical change to the CTS.

A.9 CTS Table 4.3-2 contains the surveillance requirements for the ESFAS Functions that have been moved into ITS 3.3.5. The CTS specifies a Channel Functional Test for these ESFAS Functions. In place of the Channel Functional Test, the ISTS specifies a Trip Actuating Device Operational Test (TADOT).

The CTS is revised to replace the Channel Functional Test requirement with the new ISTS defined TADOT requirement. The CTS Channel Functional Test as well as the new ISTS TADOT are defined terms specified in Section 1.0 of the TS. The addition of the new ISTS defined terms for surveillance testing and the changes to the CTS Channel Functional Test are addressed in the changes made to TS Section 1.0, Definitions. Any technical changes to the requirements for individual ESFAS Functions will be addressed in the detailed markup of those requirements in CTS Table 4.3-2. This DOC is intended to address the replacement of the Channel Functional Test requirement in Table 4.3-2 with the new ISTS TADOT. The ISTS TADOT is intended to address those ESFAS instrument channels that consist of a more simple input such as a manual switch or other device that simply opens or closes contacts in the ESFAS. The TADOT is used to replace the CTS Channel Functional Test for individual instrument channel Functions. The specific ISTS test definition for TADOT provides a more accurate description of the testing that is actually performed on this type of instrument Function.

The proposed change is acceptable because the new test term contains specific test requirements applicable to the loss of power instrument Functions that more accurately describe the required testing for each Function. The proposed change does not introduce a technical change to the method by which each type of instrument is currently tested. The proposed change only results in the use of defined terms that more accurately describe the current test method for each

instrument Function. As such, the loss of power Functions continue to be tested in a similar manner as before but the testing being performed is more consistent with the TS defined terms being used to specify the required testing. The proposed change is designated administrative because it does not introduce technical changes to the surveillance testing currently performed for the loss of power instrument Functions.

A.10 CTS Table 4.3-2 contains the surveillance requirements for the loss of power instrumentation (ESFAS Function 6). In addition to specifying the surveillance requirements, the CTS Table also repeats the list of Functions and the applicable Modes for each Function. CTS Table 4.3-2 specifies a Channel Calibration on a refueling (18 month) frequency and a Channel Functional Test on a quarterly frequency for each loss of power instrument function. The corresponding ITS 3.3.5 surveillance requirements (Channel Calibration and TADOT) are not listed in a table format. The ITS 3.3.5 surveillances are presented in the standard format without using a Table. The CTS is revised to conform to the ITS. This changes the CTS by eliminating Table 4.3-2 for the loss of power instrument function surveillances. This DOC is intended to address the elimination of the CTS Table format. Other DOCs specified in the markup of Table 4.3-2 and Table 3.3-2 address technical changes to the CTS requirements (including the applicable Mode change on Table 3.3-2).

The proposed change is acceptable because the technical requirements contained in Table 4.3-2 are retained in proposed ITS 3.3.5 surveillances without the need of a separate table. The CTS Table lists the specific loss of power Functions. In addition, the CTS Table lists the required surveillances and applicable Modes for each Function. However, the applicable Modes and surveillances are the same for each loss of power Function on CTS Table 4.3-2. As such, ITS 3.3.5 continues to list the specific loss of power Functions but only specifies the applicable Modes and surveillances (ITS SR 3.3.5.1 and SR 3.3.5.2) once within ITS 3.3.5 consistent with the more typical presentation of these requirements in the ISTS. As the surveillances and applicable Modes are the same for each Function listed on CTS Table 4.3-2, it is not necessary to repeat this information for each Function on a table. The Table format is more useful when the requirements are different for each Function listed on the Table. Therefore, the technical requirements specified on CTS Table 4.3-2 are retained in the ITS format and elimination of CTS Table 4.3-2 does not result in a technical change to the CTS requirements. The proposed change is designated administrative because it does not result in a technical change to the CTS requirements.

A.11 The loss of power instrumentation is currently specified in CTS 3.3.2.1, "ESFAS" (Functions 6a, b, and c on CTS Table 3.3-3). CTS 3.3.2.1 contains a Note modifying the Actions that states "Separate ACTION statement entry is allowed for each Function." The corresponding ITS 3.3.5 Actions contains a similar note that states "Separate Condition entry is allowed for each Function." The CTS 3.3.2.1 note affecting the loss of power instrument Functions is revised to be consistent with the corresponding ISTS note. This changes the CTS by revising the format of the Actions Note to conform to the ISTS convention for this note.

The proposed change is acceptable because the allowance provided by the ISTS note corresponds directly to the allowance provided by the CTS Note. The note

text is revised to conform to the presentation of Actions in the ISTS. As such, the proposed change does not represent a technical change to the CTS. The proposed change only revises the format and presentation of the CTS note in order to fit the ISTS. The proposed change is designated administrative because it does not represent a technical change to the CTS requirements.

A.12 CTS Table 4.3-2 contains the surveillance requirements for the loss of power instrumentation (ESFAS Function 6). The CTS ESFAS surveillances also include the requirement to perform response time testing (ESFAS surveillance 4.3.2.1.3). The ESFAS surveillance requirement for response time testing is not included in Table 4.3-2 but is applicable to all ESFAS instrument functions with a response time specified in the LRM. To see all changes made to the ESFAS response time surveillance 4.3.2.1.3 see the markup and DOCs associated with CTS 3.3.2.1, "ESFAS". The changes made to this surveillance requirement in CTS 3.3.2.1 are applicable to all ESFAS Functions including the loss of power functions. However, as the loss of power instrumentation Functions are being removed from the ESFAS specification and placed in a different specification (ITS 3.3.5) the ESFAS requirement for response time testing must also be moved into ITS 3.3.5. The proposed change re-organizes the location of the ESFAS surveillance requirement (i.e., presents the response time surveillance along with the other surveillance requirements applicable to the loss of power instrumentation). Thus the proposed change maintains the current surveillance requirements for the loss of power instrumentation in the new ITS 3.3.5 specification. The proposed change involves moving requirements from the ESFAS specification to ITS 3.3.5 (SR 3.3.5.3) and does not introduce a technical change to the surveillance requirements applicable to the loss of power instruments in the ESFAS specification. The proposed change is designated administrative because it does not represent a technical change to the CTS requirements.

Unit 2 ITS 3.3.6 Containment Purge and Exhaust Isolation Instrumentation
CTS 3.9.9 Containment Purge and Exhaust System
CTS 3.3.3.1 Radiation Monitoring
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 Unit 2 only. *(Category 7 – Relaxation Of Surveillance Frequency)* CTS surveillance 4.9.9 requires testing the containment purge and exhaust isolation valve actuation (by radiation monitor and manual) every 7 days. ITS 3.3.6 specifies the requirements for the manual initiation capability for the containment purge and exhaust valves. The corresponding ITS surveillance (SR 3.3.6.3) requires that the manual isolation capability of the containment purge and exhaust valves be verified every 18 months by a Trip Actuating Device Operational Test (TADOT). The CTS is revised to conform to the ITS. This changes the CTS manual actuation verification surveillance interval from every 7 days to once per 18 months. The requirements for automatic valve actuation on high radiation and the valve closing time are retained in ITS 3.9.3. Changes to those surveillance requirements are addressed in Section 3.9. This DOC is intended to address the manual instrumentation requirement for the purge and exhaust isolation valves.

The purpose of CTS surveillance 4.9.9 is to verify the required actuation of the containment purge and exhaust isolation system. The proposed change is consistent with the ITS, and revises the CTS 7-day frequency for manual valve actuation testing to once every 18 months. This change is also consistent with the standard requirements for manual actuation testing of other Engineered Safety Features Actuation System (ESFAS) components in the TS (i.e., SI, Containment Spray, Containment Isolation Phase A & B, Steam line isolation, etc.). The proposed change is acceptable considering that the 18-month frequency has proven adequate for the equally important ESFAS Functions (identified above) and considering the other existing testing that is required for the containment purge and exhaust isolation function. The other surveillance requirements that are applicable to this function are also consistent with the surveillances required for ESFAS type functions and are therefore appropriate for the containment purge and exhaust isolation function. The surveillance requirements for the purge and exhaust valve isolation capability include a 12 hour Channel Check (radiation monitors), a 92 day Channel Operation Test (radiation monitors), an 18 month Trip Actuating Device Operational Test (manual initiation), and an 18 month Channel Calibration (radiation Monitors) and a verification of automatic valve actuation and valve closure time every 18 months (in ITS 3.9.3). The replacement of the 7 day surveillance frequency with an 18 month requirement for the manual actuation testing of the containment purge and exhaust isolation function continues to adequately verify the manual capability of the containment purge and exhaust valves. The instrumentation and actuation surveillance requirements applicable to this system adequately verify the operability of containment purge and exhaust system isolation function in a manner and frequency consistent with other equally important ESFAS functions.

This change is designated as less restrictive because the surveillance will be performed less frequently under the ITS than under the CTS.

L.2 Unit 2 only. *(Category 4 – Relaxation of Required Action)* CTS 3.3.3.1 Action a states "With a radiation monitoring channel alarm/trip setpoint exceeding the value shown in Table 3.3-6, adjust the setpoint to within the limit within 4 hours or declare the channel inoperable." CTS Action b states "With one or more radiation monitoring channels inoperable, take the ACTION shown in Table 3.3-6." CTS Table 3.3-6 refers the user to Specification 3.9.9 for the appropriate Action. The CTS 3.9.9 Action requires the purge and exhaust penetrations to be isolated. The corresponding ITS LCO 3.3.6 Condition A states "One radiation monitoring channel inoperable." Required Action A.1 states "Restore the affected channel to OPERABLE status," with a Completion Time of 4 hours. If ITS Required Action A.1 is not met, or two radiation monitor channels are inoperable, ITS Required Action B.1 and B.2 required that the affected penetrations be isolated or fuel movement involving recently irradiated fuel be suspended immediately. The CTS is revised to conform to the ITS. This changes the CTS by allowing a radiation monitoring channel to be inoperable for any reason up to 4 hours (ITS Action A.1) before the affected penetrations must be isolated or fuel movement involving recently irradiated fuel must be suspended (ITS Actions B.1 and B.2).

The purpose of ITS Action A is to allow 4 hours to repair an inoperable radiation monitoring channel for any reason. The CTS allows 4 hours to adjust a setpoint to within the required limit. The proposed change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing a reasonable time to repair the inoperable equipment. The Required Actions are consistent with safe operation under the specified Condition, considering the operable status of the other containment purge and exhaust radiation monitor channel. The remaining operable radiation monitor channel continues to provide assurance the purge and exhaust penetrations will be isolated when required. The proposed change provides a completion time sufficiently short for continued safe operation without single failure protection considering the low probability of a design basis accident occurring during the completion time that would require both radiation monitors operable. In addition, the proposed change continues to assure immediate Action is taken to isolate the affected penetrations or suspend fuel movement involving recently irradiated fuel if two radiation monitors are inoperable. As such, the proposed change continues to assure the plant is operated in a safe manner. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.3 Unit 2 only. *(Category 7 – Relaxation Of Surveillance Frequency)* Unit 2 CTS Surveillance Requirement 4.9.9, in parts, states "The Containment Purge and Exhaust isolation system shall be demonstrated OPERABLE at least once per 7 days by verifying that containment Purge and Exhaust isolation occurs on manual initiation." ITS Table 3.3.6 specifies the Manual Initiation Function is required to be OPERABLE and SR 3.3.6.3 is required to be performed. ITS SR 3.3.6.3 states "Perform Trip Actuating Device Operational Test (TADOT) every 18 months. The TADOT is performed to ensure the manual initiation will perform the intended Function. A Note modifies the requirement. The Note states "Verification of

setpoint is not required." This changes the CTS by decreasing the frequency of the required testing from 7 days to 18 months.

The purpose of ITS SR 3.3.6.3 is to provide adequate testing of the containment purge and exhaust manual initiation and that each channel can perform its design function. This change is acceptable because the new Surveillance Frequency provides an acceptable level of testing to ensure equipment operability and reliability. This based on the simple and reliable circuits associated with the manual initiation instrument functions. The requirement to perform a TADOT every 18 months on the manual initiation function is consistent with the requirements applicable to all other manual initiation functions in the TS. For example, the 18-month test frequency is specified for the manual reactor trip and manual SI Functions. As such, this frequency of testing is consistent with the standards applied to all safety critical manual functions in the TS and has been shown by industry experience to be adequate to verify the operability of manual switch functions. The modification of the requirement that the verification of setpoint is not required is acceptable because there is no setpoint associated with this switch. This change is designated as less restrictive because Surveillance Requirements will be performed less frequently under the ITS than under the CTS.

L.4 Unit 2 only. *(Category 7 – Relaxation Of Surveillance Frequency)* CTS Table 4.3-3 specifies the surveillance requirements for the radiation monitor channels. CTS Table 4.3-3 specifies that a Channel Functional Test (CFT) be performed on a monthly frequency. The corresponding ITS surveillance requirement (ITS SR 3.3.6.2) states "Perform CHANNEL OPERATIONAL TEST (COT)," every 92 days. The difference between the CTS CFT and ITS COT is addressed in the markups and DOCs associated with the defined test terms in Section 1.0 of the TS. The CTS surveillance is revised to be consistent with the ITS. This changes the CTS by decreasing the frequency of the required testing from monthly to 92 days.

The proposed change is acceptable because the new frequency is adequate to confirm the instrumentation operability and to ensure equipment reliability. The proposed change introduces a test frequency for this surveillance consistent with the frequency for this surveillance used to confirm the operability of more complicated and safety significant reactor protection and ESFAS instrument channels. The proposed test frequency has been shown to be adequate to routinely confirm the operability of reactor protection and ESFAS instrument channels. As such, the proposed change will also provide adequate assurance the affected radiation monitoring channels are maintained operable similar to the reactor protection and ESFAS instrument channels currently tested at this frequency. In addition, the proposed change is acceptable based on the recommendations of NUREG-1366, Improvements to Technical Specifications Surveillance Requirements, 12/1/92. In NUREG-1366, the NRC evaluated the surveillance testing performed on various plant equipment and recommended certain changes. Extending the surveillance interval for testing radiation monitoring channels from monthly to quarterly was one of the specific recommendations in NUREG-1366. This change is designated as less restrictive because Surveillance Requirements will be performed less frequently under the ITS than under the CTS.

More Restrictive Changes (M)

M.1 Unit 2 only. CTS LCO 3.9.9 Action states "close each of the purge and exhaust penetrations providing direct access from the containment atmosphere to the outside atmosphere." ITS Required Action B.1 states "Place and maintain containment purge and exhaust valves in closed position." The Completion Time for ITS Required Action B.1 is immediate. The CTS is revised to conform to the ITS. This changes the CTS Action by specifying an immediate Completion Time.

The ITS and CTS Actions accomplish the same end (i.e., containment purge and exhaust system isolation). However, the ITS Action has a specific immediate completion time. Although the CTS Action may be interpreted to be an immediate Action, the proposed change removes the need for interpretation and includes a specific completion time not previously stated in the CTS requirement. The proposed change is acceptable because it continues to assure the required action is completed in a timely fashion. The proposed change provides additional emphasis on the importance of isolating containment penetrations with direct access to the outside atmosphere when necessary. As such the proposed change does not adversely affect the safe operation of the plant. The proposed change is designated more restrictive because the ITS Action includes a specific and immediate completion time that is not part of the CTS Actions.

M.2 Unit 2 only. CTS 3.3.3.1 Action b states, "With one or more radiation monitoring channels inoperable, take the ACTION shown in Table 3.3-6. CTS Table 3.3-6 specifies Action 22 be taken. CTS Table 3.3-6 Action 22 requires the action specified in CTS 3.9.9 to be applied. The Action in CTS 3.9.9 requires the containment purge and exhaust penetrations to be isolated. The corresponding ITS Action Condition B requires that the containment purge and exhaust penetrations be isolated immediately. The CTS is revised to conform to the ITS. This changes the CTS Action by specifying an immediate Completion Time.

The ITS and CTS Actions accomplish the same end (i.e., containment purge and exhaust system isolation). However, the ITS Action has a specific immediate completion time. Although the CTS Action may be interpreted to be an immediate Action, the proposed change removes the need for interpretation and includes a specific completion time not previously stated in the CTS requirement. The proposed change is acceptable because it continues to assure the required action is completed in a timely fashion. The proposed change provides additional emphasis on the importance of isolating containment penetrations with direct access to the outside atmosphere when necessary. As such the proposed change does not adversely affect the safe operation of the plant. The proposed change is designated more restrictive because the ITS Action includes a specific and immediate completion time that is not part of the CTS Actions.

Removed Detail Changes (LA)

LA.1 Unit 2 only. *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS Tables 3.3-6 and 4.3-3 specify the requirements for the radiation monitors associated with the containment purge

and exhaust isolation system. The CTS Tables also describe the radiation monitors as "(Xe-133)" and "(2HVR-RQ104A & B)" and include the measurement range of the monitors. The corresponding ITS requirements do not contain this descriptive design information. The CTS is revised to conform to the ITS. This changes the CTS by moving the description of the monitors (Xe-133) and (2HVR-RQ104A & B) and the measurement range from the TS to the Bases associated with ITS 3.3.6.

The removal of these details, which are related to system design and description, from the TS is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The TS retain the requirement for each of these instruments to be operable in the specified Modes with the required setpoint to perform their required function. Any change to the individual radiation instrument is addressed by a separate discussion of change. This change addresses the movement of the instrument description and measurement range from the TS to the associated ITS Bases. Also, this change is acceptable because the design description information will be retained within the ITS bases and changes to the ITS Bases are controlled by the TS Bases Control Program specified in the Administrative Controls Section of the TS. This program provides for the evaluation of changes to ensure the Bases are properly controlled and that prior NRC review and approval is requested when required. This change is designated as a less restrictive removal of detail change because design description detail is being removed from the TS.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 Unit 2 only. Unit 2 CTS 3.9.9 contains the requirements for the Containment Purge and Exhaust Isolation System. These requirements address the manual and automatic (on high radiation) isolation capability of the system. CTS 3.3.3.1,

"Radiation Monitors" contains the requirements for the radiation monitors associated with the Containment Purge and Exhaust Isolation System. ITS 3.3.6 consolidates the instrument requirements for the Containment Purge and Exhaust Isolation System (from CTS 3.9.9 and CTS 3.3.3.1) into a single Instrumentation TS. The ITS uses a Table (3.3.6-1) to list the required instrument channels and applicable surveillance requirements. The CTS is revised to conform to the ITS. This changes the CTS by consolidating the instrumentation requirements for the Containment Purge and Exhaust Isolation System into a single instrumentation TS (ITS 3.3.6). The requirement for manual initiation channels previously addressed in the CTS surveillance 4.9.9 is itemized in proposed ITS Table 3.3.6-1 as part of the required isolation instrumentation. The technical changes to these requirements are addressed by other DOCs referenced from the CTS markups showing the changes. This DOC is only intended to address the re-organization of the Unit 2 CTS requirements. The corresponding Unit 1 requirements are addressed in the markup of the Unit 1 CTS 3.9.9 and 3.3.3.1 in DOC R.1.

The proposed change is acceptable because it re-organizes the CTS requirements for Containment Purge and Exhaust Isolation instruments (manual and radiation monitoring channels) into a single instrumentation TS consistent with the presentation of these requirements in the ITS. The proposed change provides a line item requirement for manual instrumentation on ITS Table 3.3.6-1 instead of only addressing the requirement for this instrumentation in CTS surveillance 4.9.9. The line item requirement for manual initiation is specified on ITS Table 3.3.6-1 as one channel per valve consistent with the BVPS design of this manual function (i.e., there is no system level manual actuation for these valves). The proposed change to the manual initiation requirement improves the clarity of these requirements and makes the presentation of these requirements more consistent with the presentation of other instrument requirements. The re-organization of the CTS requirements does not introduce a technical change and only represents a change in the format and presentation of the CTS requirements. As such, the proposed change is designated administrative.

A.3 Unit 2 only. Unit 2 CTS 3.9.9 (ITS 3.3.6) is revised by the designation that the specification is applicable to Unit 2 only. This change affects both the CTS and ITS versions of this specification. The proposed change is necessary due to the design and licensing bases differences between BVPS Unit 1 and 2.

The proposed change is acceptable because BVPS Unit 1 will not have corresponding TS requirements in the ITS. Unit 1 can not rely on isolation of the Containment Purge and Exhaust System to mitigate the consequences of a fuel handling accident that requires isolation or filtration. Unit 1 must rely on filtration of the Containment Purge and Exhaust System effluent when necessary to mitigate the consequences of a fuel handling accident. See DOC R.1 associated with Unit 1 CTS 3.9.9 for more detail. As the applicable technical differences between Unit 1 and 2 CTS 3.9.9 are discussed in DOC R.1 associated with Unit 1 CTS 3.9.9, this change merely documents the Unit specific difference and is, therefore, designated administrative.

A.4 Unit 2 only. The Action for CTS 3.9.9 states in part, "With the Containment Purge and Exhaust isolation system inoperable...." The corresponding ITS 3.3.6 Action Condition specifies the following, " One or more manual channels inoperable or two radiation monitoring channels inoperable or Required Action and associated

Completion Time for Condition A not met." The CTS Action is revised to be consistent with the ITS Action Condition B. This changes the CTS Action by specifying individual Action Conditions consistent with the instrumentation addressed by the new ITS 3.3.6.

The proposed change combines the Containment Purge and Exhaust system radiation monitor instrumentation requirements (CTS 3.3.3.1) with the CTS 3.9.9 requirement for the manual actuation of the Containment Purge and Exhaust valves. The proposed change is necessary to provide Action Conditions that address all the associated instrumentation. The proposed change is acceptable because it is necessary to clearly address all the Containment Purge and Exhaust system instrumentation in the ISTS format. Other changes to the CTS manual and radiation monitor Action requirements are addressed separately by the individual DOC associated with each change. This DOC only addresses the grouping of the instrumentation requirements into a common TS and Action Condition. The reorganization of the CTS requirements into a single Action Condition does not introduce a technical change to the CTS requirements and results in a TS that is more consistent with the ISTS. The proposed change is designated Administrative because it reformats the CTS requirements to accommodate the combination of requirements into a single TS.

A.5 Unit 2 only. CTS 3.9.9 Action states, in part, "The provisions of Specification 3.0.3 are not applicable." The corresponding ITS LCO 3.3.6 Actions do not include a provision stating that Specification 3.0.3 is not applicable. The CTS is revised to conform to the ITS. This changes the CTS Actions by deleting the provision that states the exception to LCO 3.0.3.

ITS LCO 3.3.6 Applicable states "During movement of recently irradiated fuel assemblies within the containment and during movement of fuel assemblies over recently irradiated fuel assemblies within the containment." The movement of fuel assemblies within containment can only occur in MODE 6. The ITS specification 3.0.3 contains a provision that 3.0.3 does not apply in Modes 5 and 6. Therefore, the CTS 3.9.9 exception to LCO 3.0.3 is not required and is deleted. The proposed change is acceptable because the ITS Specification 3.0.3 contains a provision that excepts its requirements in Modes 5 and 6 such that individual exception statements in each TS are not required. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.6 Unit 2 only. CTS 3.9.9 Action requires the purge and exhaust system penetrations to be isolated when the isolation system is inoperable. The corresponding ITS 3.3.6 Actions offer an alternative to isolating the penetrations. ITS 3.3.6 Required Action B.2 allows the Required Actions of ITS 3.9.3 to be applied in lieu of isolating the affected penetrations. The alternate Action provided by ITS 3.9.3 requires that fuel movement involving recently irradiated fuel be suspended immediately. The CTS Actions are revised to conform to the ITS Actions. This changes the CTS Actions by adding the alternate Action to suspend fuel movement involving recently irradiated fuel immediately.

The applicability of CTS 3.9.9 is during fuel movement involving recently irradiated fuel. During this plant condition the purge and exhaust isolation capability of CTS 3.9.9 is required operable. If no movement of fuel involving recently irradiated fuel is taking place the isolation functions specified in CTS 3.9.9 are not required to be

operable. Although unstated in the CTS, suspending the movement of fuel involving recently irradiated fuel is always an option for the plant staff conducting such operations. The suspension of this operation is not prohibited by the CTS. Therefore, the proposed change which adds this option to the Actions is considered a clarification that does not introduce a new alternative to the existing Actions. The proposed change is acceptable because it only clarifies the existing option to exit the applicability of the TS. The proposed change is designated administrative because it has no technical impact on the CTS requirements.

A.7 Unit 2 only. CTS surveillance 4.9.9 requires, in part, the verification of containment purge and exhaust isolation by manual actuation. The corresponding ITS surveillance SR 3.3.6.3 specifies a Trip Actuating Device Operational Test (TADOT) instrument test for the manual action verification. The ITS TADOT SR includes a note that states, "verification of setpoint is not required." The CTS requirement for manual actuation verification is revised consistent with the ITS SR 3.3.6.3. This changes the CTS by specifying the defined (in Section 1.0 of the ITS) instrumentation test requirement (i.e., the TADOT) for the required manual actuation test. In addition, the proposed change includes the ITS SR Note excepting the verification of a setpoint in the surveillance.

The proposed change implements the standard ISTS surveillance for manual hand switches (the TADOT). In the ISTS, the requirements for manual actuation of systems and components is included in the instrumentation Specifications and assigned the TADOT surveillance. The TADOT continues to assure the manual operation of the containment purge and exhaust valves is adequately verified. The Note excepting the verification of setpoints is a necessary clarification because the TADOT defined test term requires setpoint verification and manual switches do not have setpoints. The use of this note is also a standard format convention of the ISTS when the instrument being tested does not have a setpoint or setpoint verification is not required for other reasons. As such, the proposed change is acceptable because it does not change the technical requirements of the CTS and is necessary to conform to the ISTS presentation of the manual switch surveillance requirements. The proposed change is designated administrative because it does not introduce technical changes to the CTS surveillance.

A.8 Unit 2 only. CTS 3.9.9 contains the requirements for the containment purge and exhaust isolation system. The CTS surveillance 4.9.9 contains requirements to verify the required valve actuations. CTS 3.3.3.1 contains the requirements for the radiation monitors associated with the containment purge and exhaust isolation system. The corresponding ITS 3.3.6 contains a more complete set of containment purge and exhaust isolation system requirements. ITS 3.3.6 includes the manual valve actuation requirement as well as the requirements for the radiation monitors associated with the containment purge and exhaust isolation system. The additional radiation monitor requirements include the Channel Check, Channel Operational Test, and Channel Calibration surveillance requirements associated with the radiation monitors. CTS 3.9.9 is revised to incorporate the associated radiation monitor surveillance requirements consistent with ITS 3.3.6. This DOC addresses the addition of the radiation monitor surveillance requirements into a common containment purge and exhaust isolation system TS. Changes to the surveillance requirements are addressed in the DOCs associated with CTS 3.3.3.1.

The proposed change re-organizes the surveillance requirements associated with the containment purge and exhaust system into a common TS. The proposed change is acceptable because re-organizing the CTS requirements into a common TS does not introduce a technical change to the CTS requirements and is necessary to conform to the presentation of these requirements in the ISTS. The proposed change provides a clear set of related requirements in a single TS. The proposed change is designated administrative because it does not introduce a technical change to the CTS.

A.9 Unit 2 only. CTS LCO 3.3.3.1 states "The radiation monitoring instrumentation channels shown in Table 3.3-6 shall be OPERABLE with their alarm/trip setpoints within the specified limits." CTS Table 3.3-6 requires for noble gas and effluent process monitor instrument for containment purge exhaust to be OPERABLE with 2 channels with a trip setpoint listed. The corresponding ITS LCO 3.3.6 states "The Containment Purge and Exhaust Isolation instrumentation for each Function in Table 3.3.6-1 shall be OPERABLE." ITS Table 3.3.6-1 requires the Containment Radiation Monitor to be OPERABLE with 2 required channels and lists the setpoint for the required instruments. The CTS is revised to conform to the ITS. This changes the CTS by re-organizing the containment purge and exhaust isolation instrumentation into a single TS (ITS 3.3.6).

This change is acceptable because the CTS requirements are translated into the ITS format and presentation without introducing a technical change to the CTS requirements. The proposed change is necessary because the ISTS does not have a separate Radiation Monitoring specification. The ITS continues to require the Containment Purge and Exhaust radiation monitoring instrumentation to be OPERABLE with the same 2 required channels, the same setpoint, and the same applicability. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.10 Unit 2 only. CTS 3.3.3.1 Action c states, "The provisions of Specification 3.0.3 are not applicable." The corresponding ITS LCO 3.3.6 Actions do not include a provision stating that Specification 3.0.3 is not applicable. The CTS is revised to conform to the ITS. This changes the CTS Actions by deleting the provision that states the exception to LCO 3.0.3.

ITS LCO 3.3.6 Applicable states "During movement of recently irradiated fuel assemblies within the containment and during movement of fuel assemblies over recently irradiated fuel assemblies within the containment." The movement of fuel assemblies within containment can only occur in Mode 6. The ITS specification 3.0.3 contains a provision that 3.0.3 does not apply in Modes 5 and 6. Therefore, the CTS 3.3.3.1 exception to LCO 3.0.3 is not required and is deleted. The proposed change is acceptable because the ITS Specification 3.0.3 contains a provision that excepts its requirements in Modes 5 and 6 such that individual exception statements in each TS are not required. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.11 Unit 2 only. CTS surveillance 4.3.3.1 is applicable to the containment purge and exhaust isolation radiation monitor channels. The CTS surveillance states, "Each radiation monitoring instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations during the modes and at the frequencies shown in Table 4.3-3." The corresponding ITS surveillance requirements consist of a separate surveillance number for each requirement listed in CTS 4.3.3.1 (i.e., SR 3.3.6.1 & SR 3.3.6.2 & SR 3.3.6.4). ITS Table 3.3-6 continues to identify the required surveillance for each instrument function (by individual number) similar to CTS Table 4.3-3 which uses the CTS defined test terms for the surveillance. The CTS is revised to conform to the ITS. This changes the CTS by reformatting the presentation of the surveillance requirements applicable to the containment purge and exhaust isolation radiation monitoring channels. This DOC is intended to address the reformat of the CTS surveillances. Technical Changes to the CTS surveillances are identified in the markups and DOCs associated with CTS Table 4.3-3 which specifies the individual surveillance requirements.

The proposed change is acceptable because it maintains the CTS requirements in the ITS format. The proposed change continues to assure the required surveillances are performed to confirm the operability of the associated radiation monitor channels. As such, the proposed change does not adversely affect the safe operation of the plant and is necessary to conform to the ITS format and presentation of these requirements. The proposed change is designated administrative because it does not introduce a technical change to the CTS requirements.

A.12 Unit 2 only. The CTS Table 3.3-6 table heading titled "Minimum Channels Operable" is revised to be "Required Channels" consistent with the corresponding ISTS Table 3.3.6-1 Table headings. In addition, the Minimum Channels Operable column of CTS Table 3.3-6 is deleted consistent with the content of the corresponding ISTS Table 3.3.6-1.

The proposed change is acceptable because the revisions described above do not result in technical changes to the number of instrument channels required operable or the applicable Actions when the required channels are not met. All Actions for an inoperable instrument channel in the ISTS are based on the Required Channels specified for the affected function. The new ISTS Action Conditions specify the appropriate action when one or more "Required" instrument channels are inoperable. The minimum channels column used in the

CTS to identify the number of operable channels for which continued operation is permissible is no longer used or required in the TS. The ISTS Actions encompass the concept of the minimum required channels, i.e., the Actions would apply and if not met, the plant would be required to be placed in a Mode or Condition outside the Applicable Mode. The ISTS Actions accomplish this without a specific reference to the minimum channels operable. As such, the proposed change described above does not introduce a technical change to the CTS requirements. In addition, any technical changes to the CTS Actions associated with the affected instrument functions are identified in the markup of those Actions and addressed in the DOCs associated with the changes to the CTS Actions. This DOC is intended to address the reformat of the CTS Table 3.3-6 to conform to the corresponding ISTS Table 3.3.6-1. Therefore, this change is designated administrative.

A.13 Unit 2 only. CTS Table 4.3-3 contains the surveillance requirements for the Containment Purge and Exhaust isolation Radiation Monitors. CTS Table 4.3-3 specifies a Channel Functional Test for the Radiation Monitors. In place of the Channel Functional Test ITS SR 3.3.6.2 specifies a Channel Operational Test (COT). The CTS is revised to replace the single Channel Functional Test requirement with the new ISTS defined test requirement (i.e., COT). The CTS Channel Functional Test as well as the new ISTS COT are defined terms specified in Section 1.0 of the TS. The addition of the new ISTS defined terms for surveillance testing and the technical changes to the CTS Channel Functional Test defined term are addressed in the changes made to TS Section 1.0, Definitions. Any technical changes to the requirements for individual radiation monitors will be addressed in the detailed markup of those requirements in CTS Table 4.3-3. This DOC is intended to address the replacement of the Channel Functional Test defined term in Table 4.3-3 with the new ISTS defined term "COT".

The proposed change is acceptable because the radiation monitors will continue to be tested in the same manner as before. The proposed change does not introduce a technical change to the method by which the radiation monitors are currently tested. The proposed change only results in the use of the ISTS specific defined terms for surveillance testing. As such, the radiation monitors continue to be tested in a similar manner as before but the testing being performed is more consistent with the TS defined terms being used to specify the required testing. The proposed change is designated administrative because it does not introduce technical changes to the surveillance testing currently performed for each instrument Function.

A.14 Unit 2 only. CTS 3.9.9 Action specifies that "With the containment purge and exhaust system inoperable...." The corresponding ITS 3.3.6 Actions are based on the individual instrument Functions associated with the Containment Purge and Exhaust isolation system. In addition, the ITS Actions are modified by a Note, which states "Separate Condition entry is allowed for each Function." The CTS is revised to be consistent with the ISTS. This changes the CTS by the addition of the ISTS note allowing separate condition entry for each inoperable instrument Function.

The CTS requirements for the instrument Functions associated with the containment purge and exhaust isolation system are currently located in two different TS (CTS 3.9.9 for manual initiation and CTS 3.3.3.1 for radiation

monitors). As such, the CTS Actions for the different containment purge and exhaust system instrumentation are applied separately in each of the CTS that address this instrumentation. The ISTS consolidates the different containment purge and exhaust isolation instrumentation into a single TS (ITS 3.3.6). As such, the addition of the ISTS note is consistent with how the CTS Action is currently applied. Therefore, the proposed change is acceptable because it retains the CTS allowance to apply Actions separately to each of the instrument Functions associated with the containment purge and exhaust isolation system. As such, the addition of the ISTS Note is considered a clarification of the CTS Action requirements that does not modify the technical requirements of the CTS. The proposed change is made to adopt the format conventions of the ISTS for Actions that allow for multiple inoperable functions. This change is designated as administrative because the technical requirements of the specifications have not changed.

Relocated (R)

R.1 Unit 1 only.

Unit 1 CTS 3/4.9.9 Containment Purge and Exhaust Isolation System

Unit 1 CTS 3/4.3.3.1 Radiation Monitoring, Table 3.3-6 and Table 4.3-3 Instrument 1.b.i Purge & Exhaust Isolation (RM-1VS 104 A & B).

The above listed CTS LCOs contain the requirements for the automatic and manual isolation of the Containment Purge and Exhaust System. The radiation monitors specified in CTS 3/4.3.3.3.1 function to automatically isolate the Containment Purge and Exhaust Valves on high radiation. The Unit 1 CTS LCOs are required to be met during movement of recently irradiated fuel assemblies within the containment and during movement of fuel assemblies over recently irradiated fuel assemblies within the containment.

The proposed ITS 3.3.6, "Containment Purge and Exhaust Isolation Instrumentation" does not contain requirements for the Unit 1 automatic or manual Purge and Exhaust isolation. ITS 3.3.6 is only applicable to Unit 2. The CTS is revised to conform to the ITS. This changes the Unit 1 CTS Purge and Exhaust system requirements for automatic isolation on high radiation and manual isolation by moving the CTS requirements to the Unit 1 Licensing Requirements Manual (LRM).

The current BVPS design basis fuel handling accident of record (for both units) does not credit any automatic actuation to mitigate a fuel handling accident when moving fuel assemblies that are not recently irradiated or fuel over assemblies that are not recently irradiated. Recently irradiated fuel is defined in the TS Bases as "...fuel that has occupied part of a critical reactor core within the previous 100 hours." Although BVPS does not currently have a safety analysis that supports moving recently irradiated fuel assemblies, TS requirements have been retained to address the condition of moving recently irradiated fuel assemblies. The retained TS requirements applicable when moving recently irradiated fuel or fuel assemblies over recently irradiated fuel assemblies include Containment Purge and Exhaust System isolation for Unit 2 and Containment Purge and

Exhaust System effluent filtration for Unit 1. Proposed ITS 3.9.3, "Containment Penetrations" contains these BVPS unit specific requirements for the Containment Purge and Exhaust System. The current fuel handling accident analysis and CTS requirements for moving recently irradiated fuel were approved by the NRC in Amendments 241 for Unit 1and 121 for Unit 2 (dated 8/30/01).

The relocation of the Unit 1 requirements for Containment Purge and Exhaust isolation to the LRM is acceptable because BVPS Unit 1 can not credit Containment Purge and Exhaust System isolation to mitigate the consequences of a fuel handling accident in containment. Instead, Unit 1 must rely on filtration of the effluent by an operable train of the Supplemental Leakage Collection and Release System (SLCRS) when necessary to mitigate the consequences of a fuel handling accident inside containment. Unit 1 must rely on filtration of the effluent instead of isolation because the Containment Purge and Exhaust System ductwork where the radiation monitors are located is not designed to withstand a seismic event. Although the radiation monitors provide an isolation signal to the purge and exhaust valves to close, no credit for the isolation signal may be taken in the Unit 1 design basis fuel handling accident. As stated in the NRC Safety Evaluation Report (SER) for Unit 1 Amendment 23 dated 12/12/79 (which added the TS requirement for the containment air to be exhausted through SLCRS); "However, since the purge exhaust ductwork inside the containment containing the radiation monitors is non-seismic we have made dose calculations assuming the ductwork and monitors are damaged during a seismic event. In such an event we have assumed there is no containment isolation". Therefore, based on the SER applicable to the Unit 1 Containment Purge and Exhaust System, any Unit 1 safety analysis performed to support the movement of recently irradiated fuel would credit filtration instead of isolation. The proposed ITS reflect the Unit 1 Containment Purge and Exhaust System specific design and licensing bases.

In addition, the radiation monitors associated with the Unit 1Containment Purge and Exhaust Isolation System that are proposed for relocation do not:

1. Provide an automatic initiation function assumed in the safety analysis for any design basis accident described in Unit 1 UFSAR Chapter 14.
2. Provide indication or alarm functions relied on by operators to take manual actions that are assumed in the safety analyses for any design basis accident described in Unit 1 UFSAR Chapter 14.
3. Provide indication that is used to detect and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary, or
4. Monitor variables that have been identified as Regulatory Guide 1.97 Type A or Category I variables in the BVPS Unit 1 responses to Regulatory Guide 1.97. The BVPS Unit 1 Regulatory Guide 1.97 variable Type and Category are identified in the Unit 1 response to Generic Letter 82-33, Regulatory Guide 1.97, Revision 2, Supplemental Report, transmitted to the NRC by letter dated October 13, 1986.

The four policy statement criteria contained in 10 CFR 50.36(c)(2)(ii) for determining which regulatory requirements and operating restrictions should be included in the TS are as follows:

Criterion 1. Installed instrumentation that is used to detect and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.

Criterion 2. A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 3. A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 4. A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

Criteria 1 and 2 are not applicable to the Containment Purge and Exhaust Isolation System or the associated radiation monitors. Based on the design and licensing bases for the Unit 1 Containment Purge and Exhaust System and associated radiation monitors discussed above, Criterion 3 is not met either. The proposed Unit 1 ITS rely on filtration of the Containment Purge and Exhaust System effluent not system isolation as described in the NRC SER for Unit 1 Amendment 23 dated 12/12/79. Nor is the isolation function of the Containment Purge and Exhaust Isolation System and associated radiation monitors during refueling operation modeled in the BVPS PRA as documented in the Individual Plant Examinations (IPE) and the associated PRA Update Reports for both units. In addition, the actuation instrumentation for this isolation function is not significant to risk because it is not involved in any accident initiation sequences. As such, the Containment Purge and Exhaust Isolation System and associated radiation monitors were not identified as being a "constraint of prime importance in limiting the likelihood or severity of accident sequences that are commonly found to dominate risk". Therefore, these CTS requirements have not been shown by risk to be significant to public health and safety. Therefore, Criterion 4 is not met.

Consistent with the guidance of NRC Administrative Letter 96-04, "Efficient Adoption of Improved Standard Technical Specifications," BVPS proposes to relocate TS and associated Bases that do not meet any of the four policy statement criteria to the LRM. The LRM is referenced in the BVPS Unit 1 UFSAR. Relocation of TS requirements to the LRM is acceptable as changes to these relocated documents will be adequately controlled by 10 CFR 50.59. The provisions of 10 CFR 50.59 establish adequate controls for material removed from the TS, including record retention and reporting requirements. The provisions of 10 CFR 50.59 assure future changes to the relocated material will be consistent with safe plant operation.

ITS 3.3.7 Control Room Emergency Ventilation System (CREVS) Instrumentation

CTS 3.3.3.1 Radiation Monitoring Instrumentation

DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 7 – Relaxation Of Surveillance Frequency)* CTS LCO 3.3.3.1, Table 4.3-3 lists surveillance requirements for the control room area radiation monitors. The CTS specifies a Channel Functional Test (CFT) for this Function that must be performed each month. ITS LCO 3.3.7, Table 3.3.7-1 specifies the required surveillances for the CREVS actuation instrumentation. Table 3.3.7-1 specifies SR 3.3.7.2 for the control room area radiation monitors. SR 3.3.7.2 requires that a Channel Operational Test (COT) be performed every 92 days. The difference between the CTS CFT and ITS COT is addressed in the markups and DOCs associated with the defined test terms in Section 1.0 of the TS. The CTS surveillance is revised to be consistent with the ITS. This changes the CTS by decreasing the frequency of the required testing from monthly to 92 days.

The proposed change is acceptable because the new frequency is adequate to confirm the instrumentation operability and to ensure equipment reliability. The proposed change introduces a test frequency for this surveillance consistent with the frequency for this surveillance used to confirm the operability of more complicated and safety significant reactor protection and ESFAS instrument channels. The proposed test frequency has been shown to be adequate to routinely confirm the operability of reactor protection and ESFAS instrument channels. As such, the proposed change will also provide adequate assurance the affected radiation monitoring channels are maintained operable similar to the reactor protection and ESFAS instrument channels currently tested at this frequency. In addition, the proposed change is acceptable based on the recommendations of NUREG-1366, Improvements to Technical Specifications Surveillance Requirements, 12/1/92. In NUREG-1366, the NRC evaluated the surveillance testing performed on various plant equipment and recommended certain changes. Extending the surveillance interval for testing radiation monitoring channels from monthly to quarterly was one of the specific recommendations in NUREG-1366. This change is designated as less restrictive because Surveillance Requirements will be performed less frequently under the ITS than under the CTS.

L.2 Not used.

L.3 Unit 1 only. *(Category 3 - Relaxation of Completion Time and Category 4 - Relaxation of Required Action)* Unit 1 CTS 3.3.3.1 Action 41.a.2 and b.2 address the plant condition where one of the two required radiation monitors are inoperable. The CTS Actions require suspension of all operations involving movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies within 1 hour. The corresponding ITS 3.3.7 Action Condition A allows 7 days before Action must be taken in this

condition and does not require that fuel movement be suspended. Instead, the ITS Action requires that one Control Room Emergency Ventilation System (CREVS) be placed in the emergency pressurization mode of operation. The corresponding ITS Action Condition D is only applicable if ITS Action Condition A is not met and requires that fuel movement involving recently irradiated fuel be suspended immediately. The CTS Action is revised to conform to the ITS. This changes the CTS Actions by allowing up to 7 days for Action to be taken. In addition, the CTS Action is revised from suspension of fuel movement to place one CREVS train in the emergency pressurization mode. Only if the radiation monitor is not restored to operable status or the CREVS train is not placed in service within 7 days is fuel movement required to be suspended.

The radiation monitors function to provide automatic initiation of CREVS. The radiation monitors are not assumed to operate in any BVPS design bases accident analysis. However, the radiation monitors are retained in the TS in case they are needed to support the movement of recently irradiated fuel. The applicability for the monitors is revised for the condition of fuel movement involving recently irradiated fuel.

The proposed change to increase the completion time to 7 days is acceptable because in the condition addressed by the affected CTS Actions, one of the two required radiation monitors remains operable and can provide the required CREVS initiation function. Although the actuation instrumentation is no longer single failure proof, the 7-day completion time provides an appropriate restriction on continued fuel movement in this condition. Thus, the proposed change continues to provide adequate assurance that operation in the specified condition (fuel movement) is limited and that Action will be taken to restore the inoperable monitor to operable status or that the plant is placed in a safe condition. Similarly, the ITS Action requirement to place one CREVS train inservice is also acceptable since this action will accomplish the automatic function of the radiation monitor and maintain the control room in a safe operating condition while fuel movement is in progress. Once the automatic function of the radiation monitor is accomplished, the control room atmosphere is protected from the consequences of a potential fuel handling accident and the affected radiation monitor is no longer required operable to perform this action. As such, the proposed change continues to assure the plant is operated in a safe manner consistent with the assumptions of the applicable safety analyses. The proposed change is designated less restrictive because the ITS Actions provide additional time to accomplish the action and an alternate action to the CTS requirement to suspend fuel movement.

More Restrictive Changes (M)

M.1 CTS 3.3.3.1 Action "a" states, "With a radiation monitoring channel alarm/trip setpoint exceeding the value shown in Table 3.3-6, adjust the setpoint to within the limit within 4 hours or declare the channel inoperable." The CTS Action provides a 4-hour delay before a radiation monitoring channel must be declared inoperable and CTS Action "b" applied. ITS 3.3.7 does not have a corresponding Action that allows a delay before the required channel must be declared inoperable. The CTS Actions are revised to conform to the ISTS Actions. This changes the CTS by eliminating CTS Action "a" which results in radiation

monitoring channels being declared inoperable upon discovery instead of 4-hours after discovery.

The proposed change is acceptable because the default Action applied after the 4-hour delay allows 7 days to restore the inoperable channel to operable status. The additional 4 hours provided by CTS Action A is not significant considering the amount of time provided by the CTS Action applicable after the 4-hours have passed (i.e., 7 days). The corresponding ITS Actions continue to allow 7 days for restoration of an inoperable channel. Therefore, elimination of the CTS Action allowing 4 additional hours does not significantly impact equipment availability, reliability, or plant safety. The proposed change simplifies the CTS Actions without significantly affecting the total time allowed for restoration of an inoperable channel. As such, the proposed change does not affect the safe operation of the plant. The proposed change is designated more restrictive because slightly less time is allowed for restoration in the ITS than in the CTS.

M.2 Unit 2 only. Unit 2 CTS Action 46 applicable when one control room area monitor is inoperable states, "With the number of OPERABLE channels one less than required by the Minimum Channels OPERABLE requirement, either restore the inoperable channel to OPERABLE status within 7 days or close the control room series normal air intake and exhaust isolation dampers." The corresponding ITS 3.3.7 Action Condition A states "One or more Functions with one channel or train inoperable. Place one CREVS train in emergency pressurization mode in 7 days." The CTS is revised to conform to the ITS. This changes the CTS Action by revising the Action to address more actuation instrument functions than just the radiation monitors. In addition, the CTS is revised to not only isolate the control room but place a CREVS train in operation to pressurize the control room with filtered air.

ITS 3.3.7 addresses all the Control Room Emergency Ventilation System (CREVS) actuation instrumentation not just the radiation monitors. ITS 3.3.7 includes requirements for the 2 trains of manual initiation and the Containment Isolation-Phase B (CIB) signal as well as the radiation monitor channels.

The proposed change revises the scope of the CTS Action to accommodate all CREVS actuation instrumentation addressed by ITS 3.3.7. The re-organization of the CREVS instrument requirements into a single specification provides a clear set of CREVS related requirements with common Actions. In addition, the proposed change requires that the CREVS be placed in the emergency pressurization mode of operation instead of simply isolating the control room ventilation system. The CTS Action only requires that the control room ventilation intake and exhaust isolation dampers be closed to prevent unfiltered air from being introduced to the control room. As such, the proposed change provides additional assurance that the integrity of the control room boundary is maintained by both isolating the control room ventilation and pressurizing the control room to minimize in-leakage into the control room pressure boundary. Thus, the proposed change is acceptable because it provides a more clear set of CREVS instrumentation requirements while also providing additional assurance the plant is operated in a safe manner consistent with the assumptions of the applicable safety analyses. Therefore, the proposed change does not adversely affect the safe operation of the plant. The proposed change is designated more restrictive as the ITS Actions are more comprehensive than the CTS Actions.

M.3 Unit 2 only. Unit 2 CTS Action 47 applicable when two radiation monitor channels are inoperable states "With no OPERABLE channels either restore one inoperable channel to OPERABLE status within 1 hour or close the control room series normal air intake and exhaust isolation dampers. The corresponding ITS Action Condition B states "One or more Functions with two channels or two trains inoperable. Place one CREVS train in the emergency pressurization mode immediately. AND Enter applicable Conditions and required Actions of LCO 3.7.10, "CREVS" for one CREVS train made inoperable by inoperable CREVS actuation instrumentation immediately." The CTS is revised to conform to the ITS. This changes the CTS Action by revising the Action to address more actuation instrument functions than just the radiation monitors. The CTS is also revised to not only isolate the control room but place a CREVS train in operation to pressurize the control room with filtered air immediately instead of within one hour. In addition, the CTS is revised to include an Action to enter the applicable plant systems specification (3.7.10) for an inoperable train of CREVS. The Action for an inoperable CREVS train in 3.7.10 allows 7 days of operation in this condition before the CREVS train must be restored to operable status (initiation instrument channel or train restored to operable status) or the plant must be placed in a condition where the affected CREVS train is no longer required operable.

ITS 3.3.7 addresses all the Control Room Emergency Ventilation System (CREVS) actuation instrumentation not just the radiation monitors. ITS 3.3.7 includes requirements for the 2 trains of manual initiation and the Containment Isolation-Phase B (CIB) signal as well as the radiation monitor channels.

The Affected Action condition (two inoperable channels or trains) represents a loss of automatic CREVS actuation from one or more CREVS initiation Functions (manual radiation monitor, or CIB) addressed by ITS 3.3.7. The proposed change revises the scope of the CTS Action to accommodate all CREVS actuation instrumentation addressed by ITS 3.3.7. The re-organization of the CREVS instrument requirements into a single specification provides a clear set of CREVS related requirements with common Actions. The proposed change also requires that the CREVS be placed in the emergency pressurization mode of operation immediately instead of simply isolating the control room ventilation system. The CTS Action only requires that the control room ventilation intake and exhaust isolation dampers be closed within an hour to prevent unfiltered air from being introduced to the control room. As such, the proposed change provides additional assurance that the integrity of the control room boundary is maintained by both isolating the control room ventilation and pressurizing the control room more expeditiously (immediately vs 1 hour) than the CTS to minimize any control room pressure boundary in-leakage. In addition, the ITS Actions require that the applicable Required Actions be entered for one CREVS train made inoperable by the actuation instrumentation. This ITS Action serves to limit plant operation in the Mode or other specified condition of the Applicability with two inoperable instrument channels or trains to 7 days. Although the ITS requires a train of CREVS is in operation to protect the control room boundary, further limiting operation to 7 days in this condition is appropriate because redundant CREVS trains with full automatic and manual initiation capability are no longer available to assure the capability to mitigate design basis accidents assuming a single failure. Thus, the proposed change is acceptable because it provides a more clear set of CREVS instrumentation requirements while also providing additional assurance

the plant is operated in a safe manner consistent with the assumptions of the applicable safety analyses. Therefore, the proposed change does not adversely affect the safe operation of the plant. The proposed change is designated more restrictive as the ITS Actions are more comprehensive than the CTS Actions.

M.4 Unit 2 only. Unit 2 Actions 46 and 47 provide the requirements to be implemented when one or two required instrument channels are inoperable. The CTS Actions do not contain default requirements to follow if the specified Actions are not accomplished within the required time. The corresponding ITS 3.3.7 Actions include default Actions (Conditions C and D) that must be implemented if the Actions in ITS Conditions A and B are not met. The two ITS default Conditions address the different Applicabilities of ITS 3.3.7 (i.e., Modes 1-4 and fuel movement involving recently irradiated fuel). The ITS default Actions require the plant to be removed from the associated Applicability (i.e., be in Mode 5 or suspend fuel movement involving recently irradiated fuel). The CTS is revised to incorporate the ITS default Action Conditions C and D. This changes the CTS by providing clear Action requirements to implement if the primary Actions that address the inoperable condition are not met within the required completion time.

The ISTS typically contain default Actions in all Specifications to assure the correct Action is taken within a reasonable time to place the plant in a safe condition. The proposed change is acceptable because it assures that the plant is placed in a safe condition (outside the Mode or other specified condition of the TS Applicability) if the required Actions can not be accomplished within the specified time. As such, the proposed change provides additional assurance the plant continues to be operated in a safe manner consistent with the assumptions of the applicable safety analyses. Therefore, the proposed change does not adversely affect the safe operation of the plant. The proposed change is designated more restrictive as the ITS includes additional Actions that are not currently specified in the CTS.

M.5 CTS 3.3.3.1 contains the requirements for radiation monitors, including the monitors used to actuate the Control Room Emergency Ventilation System (CREVS). CTS 3.3.3.1 does not contain requirements for manual initiation of the CREVS. ITS 3.3.7 " CREVS Actuation Instrumentation," contains all the instrumentation requirements for the CREVS including the radiation monitors. ITS 3.3.7 also includes the requirements for the manual switches associated with each CREVS train. The CREVS manual initiation Function is applicable in MODES 1, 2, 3, and 4, and During the movement of recently irradiated fuel assemblies, or during movement of fuel assemblies over recently irradiated fuel assemblies." Two trains of manual initiation are required operable and a TADOT surveillance is assigned to the manual function. The CTS is revised to conform to the ITS. This changes the CTS by adding the requirements for the manual CREVS initiation Function to the TS.

The CREVS manual initiation Function consists of two train related switches in each unit's control room. Each switch will isolate one train of control room intake and exhaust dampers and start the preferred Unit 2 CREVS fan and align the fan to supply filtered ventilation.

The addition of the manual Function is acceptable because the manual feature is assumed by the safety analysis to be available for operator action to place the control room in the emergency pressurization mode of operation. Placing the

control room in the emergency pressurization mode of operation within 30 minutes after the event will assure that dose rates in the Control Room are maintained within the required limits. Thus, the proposed change provides additional assurance the plant will be operated in a safe manner consistent with the assumptions of the safety analyses. Therefore, the proposed change does not adversely affect the safe operation of the plant. The proposed ITS requirements are consistent with the ISTS wording for this requirement. This change is designated as more restrictive because it adds additional requirements not specifically included in the CTS.

M.6 CTS LCO 3.3.3.1 states "The radiation monitoring instrumentation channels shown in Table 3.3-6 shall be OPERABLE." Table 3.3-6 lists the radiation monitors required for the Control Room Area. ITS LCO 3.3.7 states "The Control Room Emergency Ventilation System (CREVS) actuation instrumentation for each Function in Table 3.3.7-1 shall be OPERABLE." ITS Table 3.3.7-1 lists all the required CREVS instrument functions which includes the containment isolation Phase B (CIB) signal. The ITS Table 3.3.7-1 specification of the CIB actuation includes a reference to the requirements for the CIB being specified in ITS 3.3.2, ESFAS Instrumentation. The CTS is revised to conform to the ISTS. This changes the CTS by specifying an additional instrumentation actuation function for the CREVS.

ITS 3.3.7 is a system related instrumentation specification that includes all the required instrumentation for the CREVS. The CIB, although specified in ITS 3.3.2, ESFAS Instrumentation, provides an actuation of CREVS that is credited in the LOCA safety analysis. The proposed change provides a more complete listing of the required CREVS actuations in a single specification. As explained in the ITS 3.3.7 bases, if the CIB function is inoperable such that only the CREVS function is affected, the less restrictive Actions of ITS 3.3.7 would be applicable. The proposed change is acceptable because the inclusion of the CIB signal with the other credited CREVS actuation instrumentation provides a complete list of required CREVS instrumentation with a common set of Actions to assure the plant is placed in a safe condition when the required instrumentation is inoperable. Thus, the proposed change ensures the control room doses after a design basis event are maintained within the required limits. As such, the proposed change provides additional assurance the plant will be operated in a safe manner consistent with the assumptions of the safety analyses. Therefore, the proposed change does not adversely affect the safe operation of the plant. The proposed ITS requirements are consistent with the ISTS wording for this requirement. This change is designated as more restrictive because it adds additional CREVS actuation instrumentation not specifically identified in the CTS as a CREVS Actuation requirement.

M.7 CTS LCO 3.3.3.1 Surveillance Requirement 4.3.3.1 states "Each radiation monitoring instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations during the modes and at the frequencies shown in Table 4.3-3." The CTS does not include any requirements for the CREVS manual initiation function. ITS LCO 3.3.7 "Control Room Emergency Ventilation System (CREVS) Actuation Instrumentation," specifies the manual initiation Function and requires SR 3.3.7.3 to be performed on the manual

function. The ITS SR requires a TADOT to be performed every 18 months. SR 3.3.7.3 is modified by a Note that states "Verification of setpoint is not required." This changes the CTS by adding a surveillance requirement that is not currently specified.

The addition of surveillance requirements for the manual Function is acceptable because the manual feature is assumed by the safety analysis to be available for operator action to place the control room in the emergency pressurization mode of operation. Placing the control room in the emergency pressurization mode of operation within 30 minutes after the event will assure that dose rates in the Control Room are maintained within the required limits. Thus, the proposed change provides additional assurance the manual initiation function is maintained operable and that the plant will be operated in a safe manner consistent with the assumptions of the safety analyses. Therefore, the proposed change does not adversely affect the safe operation of the plant. The proposed ITS requirements are consistent with the ISTS. This change is designated as more restrictive because it adds requirements not specifically included in the CTS.

M.8 Unit 1 only. CTS 3.3.3.1 contains the requirements for the control room radiation monitors. The Unit 1 CTS 3.3.3.1 Action 41 allows Unit 1 to take credit for the Unit 2 control room area radiation monitors when the corresponding Unit 1 control room area radiation monitors are inoperable. The corresponding Actions in proposed ITS 3.3.7 are simplified and treat each Unit equally and do not contain provisions for Unit 1 to credit the Unit 2 radiation monitors. The CTS is revised to conform to the ITS. The proposed change results in a more simplified set of Actions for Unit 1 that are consistent with the proposed Unit 2 Actions and the corresponding ISTS Actions.

The Unit 1 CTS Actions are derived from the previous design basis when the radiation monitors were credited in the safety analyses to mitigate the consequences of design basis accidents and the control room utilized air bottles to initiate control room pressurization. The pressurized air bottles could not be placed in service if the actuation instrumentation becomes inoperable because once initiated the bottles are expended and the system is inoperable for both units. The current safety analyses do not credit the radiation monitors in any design basis accident. In addition the control room is now pressurized by a fan system (CREVS) and does not use bottled air. A fan system may be placed in service if the actuation instrumentation is inoperable and eliminate the need for the affected actuation instrument. As such, the proposed applicable Mode where the radiation monitors are required operable is during fuel movement involving recently irradiated fuel. Currently fuel movement involving recently irradiated fuel is prohibited. The control room area radiation monitors are retained in the TS to support fuel movement involving recently irradiated fuel if this evolution is approved in the future consistent with the ISTS requirements. In addition, the ISTS Actions for an inoperable radiation monitor being adopted in ITS 3.3.7 allow up to 7 days to restore an inoperable monitor to operable status before any remedial Action is required. If the monitor can not be restored, the ITS Actions only require that a fan system be placed in service to pressurize the control room. Therefore, the proposed ITS Actions continue to offer an acceptable level of operating flexibility in the event a radiation monitor becomes inoperable and reliance on the Unit 2 monitors for Unit 1 operation is not essential.

The Unit 1 Action 41 allowance to credit the Unit 2 radiation monitors results in a complicated set of Actions unique to Unit 1. The proposed change to eliminate this allowance and simplify the Actions is acceptable considering the changes in the control room ventilation design and safety analyses described above. The Unit 1 Actions may be simplified and made consistent with the corresponding Unit 2 Actions without a significant loss of operational flexibility. The proposed change does not adversely affect the safe operation of the plant and the resulting simplified Actions provide sufficient operational flexibility and assurance that the radiation monitors are maintained operable or the control room is placed in a safe condition. The proposed change also improves consistency between the units (human factor improvement) as well as consistency with the ISTS. The proposed change is designated more restrictive because the proposed ITS Actions are more stringent than the CTS Actions.

M.9 Unit 1 only. CTS 3.3.3.1 contains the Actions applicable when one or more control room area radiation monitors are inoperable. CTS Actions 41a) 2, 41b) 2, and 41b) 3 require that the control room be isolated from the outside atmosphere by closing the series air intake and exhaust isolation dampers. The corresponding ITS 3.3.7 Action Conditions A and B require that a CREVS train be placed in the emergency pressurization mode of operation. The emergency pressurization mode of operation includes isolation of the control room ventilation intake and exhaust ducts as well as the start of a CREVS fan aligned to provide filtered makeup air to pressurize the control room. The CTS Actions are revised to conform to the ITS Actions. This changes the CTS Actions by requiring the control room to be placed in the emergency pressurization mode of operation instead of simply being isolated.

The purpose of the Action is to compensate for inoperable automatic actuation instrumentation (i.e., control room area radiation monitor(s)). By placing the CREVS in service to pressurize the control room, the Actions accomplish the automatic function of the actuation instrumentation. Once the CREVS train is placed in service, the control room is protected from the radiological consequences of the applicable design basis accidents and the affected actuation instrumentation is no longer required operable. As such, the proposed change is acceptable because it accomplishes the required control room atmosphere protection in the same manner as the automatic initiation function. Therefore, the proposed change continues to assure the plant is operated in a safe manner consistent with the assumptions of the applicable safety analysis. The proposed change is designated more restrictive because the proposed ITS Actions are more stringent than the CTS Actions.

Removed Detail Changes (LA)

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS Tables 3.3-6 and 4.3-3 specify the requirements for the radiation monitors associated with the control room emergency ventilation system (CREVS). The CTS Tables also describe the radiation monitors as "RM-1RM-218 A&B (for Unit 1) and 2RMC-RQ201 & 202 (for Unit 2)." The CTS also includes the measurement range of the monitors. The corresponding ITS requirements do not contain this descriptive design information. The CTS is revised to conform to the

ITS. This changes the CTS by moving the description of the monitors and the measurement range from the CTS to the Bases associated with ITS 3.3.7.

The removal of these details, which are related to system design and description, from the TS is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The TS retain the requirement for each of these instruments to be operable in the specified Modes with the required setpoint to perform their required function. Any change to the individual radiation instrument is addressed by a separate discussion of change. This change addresses the movement of the instrument description and measurement range from the TS to the associated ITS Bases. Also, this change is acceptable because the design description information will be retained within the ITS bases and changes to the ITS Bases are controlled by the TS Bases Control Program specified in the Administrative Controls Section of the TS. The bases control program provides for the evaluation of changes to ensure the Bases are properly controlled and that prior NRC review and approval is requested when required. This change is designated as a less restrictive removal of detail change because design description detail is being removed from the TS.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 CTS LCO 3.3.3.1states "The radiation monitoring instrumentation channels shown in Table 3.3-6 shall be OPERABLE with their alarm/trip setpoints within the specified limits." ITS LCO 3.3.7 states "The Control Room Emergency Ventilation System (CREVS) actuation instrumentation for each Function in Table 3.3.7-1 shall be OPERABLE." The CTS Applicability references Table 3.3-6 and the corresponding ITS Applicability references Table 3.3.7-1. The CTS is revised to conform to the ITS. This changes the CTS by stating the LCO and Applicability requirements in the ITS format.

The proposed change is acceptable because the ISTS does not have a separate TS for radiation monitors. The proposed change involves the re-organization of the CTS requirements into a system related instrument specification (ITS 3.3.7) consistent with the ISTS. The affected CTS requirements are related to the CREVS and are moved into ITS 3.3.7 which is specifically for the CREVS instrumentation. As such the proposed change only represents a change in the format and presentation of the CTS requirements necessary to conform to the ISTS. Technical changes to the CTS requirements are addressed by separate DOCs associated with each change. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.3 CTS 3.3.3.1 Action "b" states "With one or more radiation monitoring channels inoperable, take the ACTION shown in Table 3.3-6." ITS 3.3.7 does not have a corresponding Action. The CTS is revised to conform to the ISTS. This changes the CTS by eliminating Action "b."

CTS Action "b" provides guidance to enter the Actions referenced on Table 3.3-6. The corresponding ITS 3.3.7 Actions are not specified on a table and do not need an Action like CTS Action "b." CTS 3.3.3.1 contains Action requirements for instruments associated with various plant systems. ITS 3.3.7 is a system specific instrumentation specification (for CREVS) and the Actions are common for the instrumentation addressed by the specification. Therefore, the ITS does not need an Action to provide guidance for entering the correct Action for each type of instrument. The proposed change is acceptable because it is a change in the presentation of the Action requirements that is necessary to conform to the ISTS format. The proposed change has no technical impact on the specification. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.4 CTS LCO 3.3.3.1 Action "c" states "The provisions of Specification 3.0.3 are not applicable." The corresponding ITS 3.3.7 does not include a similar provision taking exception to Specification 3.0.3. The CTS is revised to conform to the ISTS. This changes the CTS by deleting the exception to Specification 3.0.3.

The ITS 3.3.7 Applicability for the affected radiation monitors states "During movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies." LCO 3.0.3 results in the plant being shutdown to a Mode where the LCO is no longer Applicable. As such, LCO 3.0.3 does not directly address the ITS 3.3.7 Applicability of fuel movement involving recently irradiated fuel which would normally occur during shutdown conditions. As such, placing the plant in a shutdown condition does not by itself ensure safe operation. Fuel movement involving recently irradiated fuel must be suspended or other compensatory measures (e.g., initiate the CREVS) taken to place the plant in a safe condition. The specific Actions provided in ITS 3.3.7, not LCO 3.0.3, provide the appropriate measures to ensure the plant is placed and maintained in a safe condition. In addition, due to the time constraint involved with recently irradiated fuel, the movement of recently irradiated fuel assemblies can only occur in MODES 5 and 6. Recently irradiated fuel must have been part of a critical core within the previous 100 hours. Therefore, insufficient time is available after the reactor is shutdown to enter refueling mode of operation, remove the fuel from the core, reassemble the vessel and head, and exit Mode 5 within 100 hours after the reactor is initially shutdown. For example, it typically

takes more than 100 hours after the reactor is shutdown before the first fuel assembly is moved out of the core. Therefore, the potential movement of recently irradiated fuel is confined to Modes 5 and 6. The ITS specification 3.0.3 recognizes that the Actions provided in LCO 3.0.3 are not appropriate for specifications normally applicable in shutdown Modes 5 and 6 and contains a provision that 3.0.3 does not apply in Modes 5 and 6. Therefore, the CTS 3.3.3.1 exception to LCO 3.0.3 is not required and is deleted. The proposed change is acceptable because the ITS Specification 3.0.3 contains a provision that excepts its requirements in Modes 5 and 6 such that individual exception statements in each TS normally applicable in those Modes are not required. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.5 CTS 3.3.3.1 contains the Actions for inoperable radiation monitoring instrument functions. The CTS 3.3.3.1 Actions address more than one radiation monitoring function. ITS 3.3.7 contains the radiation monitoring requirements for the Control Room Emergency Ventilation System (CREVS) Actuation Instrumentation. The ITS Actions are modified by a note that states "Separate Condition entry is allowed for each Function." This changes the CTS by adding a Note for ITS LCO Actions that specifically state each Function is allowed separate condition entry.

The CTS 3.3.3.1 Actions for the different radiation monitoring instrumentation addressed by that specification are applied separately. The CTS requirements do not prohibit entering the Actions separately for each function addressed by the specification. As such, the addition of the ISTS note is consistent with how the CTS Actions are presented and currently applied. Therefore, the proposed change is acceptable because it retains the CTS allowance to apply Actions separately to each instrument Function. As such, the addition of the ISTS Note is considered a clarification of the CTS Action requirements that does not modify the technical requirements of the CTS. The proposed change is made to adopt the format conventions of the ISTS for Actions that allow for multiple inoperable functions. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.6 CTS Surveillance Requirement 4.3.3.1 states "Each radiation monitoring instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations during the modes and at the frequencies shown in Table 4.3-3." ITS LCO 3.3.7 specifies the Surveillance Requirements applicable to each instrument function in Table 3.3.7-1. ITS 3.3.7 contains a note for the SRs that states "Refer to the Table 3.3.7-1 to determine which SRs apply for each CREVS Actuation Function." The CTS is revised to conform to the ISTS. This changes the CTS by replacing surveillance 4.3.3.1 with the ISTS note directing the user to the appropriate Table.

The proposed change represents a change in the format and presentation of the surveillance requirements. The proposed change is acceptable because it continues to assure the appropriate surveillance requirements are performed at the required frequency for each instrument function. Any technical changes to the surveillance requirements are addressed by a separate DOC noted in CTS Table 4.3-3. This change only addresses the reformat of the surveillance requirements

to be consistent with the ISTS. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.7 The CTS Table 3.3-6 table heading titled "Minimum Channels Operable" is revised to be "Required Channels" consistent with the corresponding ISTS Table 3.3.7-1 Table headings. In addition, the Minimum Channels Operable column of CTS Table 3.3-6 is deleted consistent with the content of the corresponding ISTS Table 3.3.7-1.

The proposed change is acceptable because the revisions described above do not result in technical changes to the number of instrument channels required operable or the applicable Actions when the required channels are not met. All Actions for an inoperable instrument channel in the ISTS are based on the Required Channels specified for the affected function. The new ISTS Action Conditions specify the appropriate action when one or more "Required" instrument channels are inoperable. The minimum channels column used in the CTS to identify the number of operable channels for which continued operation is permissible is no longer used or required in the ITS. The ISTS Actions encompass the concept of the minimum required channels, i.e., the Actions would apply and if not met, the plant would be required to be placed in a Mode or Condition outside the Applicable Mode. The ISTS Actions accomplish this without a specific reference to the minimum channels operable. As such, the proposed change described above does not introduce a technical change to the CTS requirements. In addition, any technical changes to the CTS Actions associated with the affected instrument functions are identified in the markup of those Actions and addressed in the DOCs associated with the changes to the CTS Actions. This DOC is intended to address the reformat of the CTS Table 3.3-6 to conform to the corresponding ISTS Table 3.3.7-1. Therefore, this change is designated administrative.

A.8 CTS Table 4.3-3 contains the surveillance requirements for the control room radiation monitors. CTS Table 4.3-3 specifies a Channel Functional Test for the radiation monitors. In place of the Channel Functional Test ITS SR 3.3.7.2 specifies a Channel Operational Test (COT). The CTS is revised to replace the single Channel Functional Test requirement with the new ISTS defined test requirement (i.e., COT). The CTS Channel Functional Test as well as the new ISTS COT are defined terms specified in Section 1.0 of the TS. The addition of the new ISTS defined terms for surveillance testing and the technical changes to the CTS Channel Functional Test defined term are addressed in the changes made to TS Section 1.0, Definitions. Any technical changes to the requirements for individual radiation monitors will be addressed in the detailed markup of those requirements in CTS Table 4.3-3. This DOC is intended to address the replacement of the Channel Functional Test defined term in Table 4.3-3 with the new ISTS defined term "COT".

The proposed change is acceptable because the radiation monitors will continue to be tested in the same manner as before. The proposed change does not introduce a technical change to the method by which the radiation monitors are currently tested. The proposed change only results in the use of the ISTS specific defined terms for surveillance testing. As such, the radiation monitors continue to be tested in a similar manner as before but the testing being performed is more consistent with the TS defined terms being used to specify the required testing. The proposed

change is designated administrative because it does not introduce technical changes to the surveillance testing currently performed for each instrument Function.

A.9 Unit 1 only. The CTS 3.3.3.1 Channel Functional Test requirement for the control room area radiation monitors is modified by footnote ###. The footnote states "Control Room intake and exhaust isolation dampers are not actuated." The corresponding ITS 3.3.7 Channel Operational Test is not modified by this note. The CTS is revised to conform to the ITS. This changes the CTS by eliminating the ### footnote.

The CTS note provided an allowance to minimize the cycling of the Unit 1 control room ventilation intake and exhaust dampers. The CTS Channel Functional Test is required to be performed on a monthly basis. The Unit 1 control room ventilation intake and exhaust dampers use inflatable seals that are subject to wear and potential increased leakage with excessive operation. Therefore, the CTS provided an exception to the required Channel Functional Test for testing the end device (dampers). The CTS definition of Channel Functional Test includes the requirement to verify the "trip function". The CTS requirement to verify the "trip function" was, in the case of the radiation monitors, conservatively interpreted to include the verification of the end device (damper). In most other applications, the CTS channel Functional Test does not include verification of the end device (e.g., SI, reactor trip, main steam isolation, etc. instrument channels). In these cases the Channel Functional Test performed each month or quarterly verified the instrument channel operability without actuating the end device (i.e., initiating SI, reactor trip, or steam line isolation, etc.) and no exceptions like the CTS footnote ### are used for these surveillance requirements. The verification of end device actuation (pump starts, valve actuations, etc.) is typically specified in the associated equipment or system specifications, not the instrumentation specifications, and is typically performed once every 18 months. The ISTS Channel Operational Test does not include the requirement to verify the "trip function" and instead requires the channel "trip setpoint" to be verified. As such, the ISTS test definition more clearly identifies the required testing as an instrument channel test not a system or component operation test. Therefore, the clarification provided by the CTS ### footnote is no longer required to limit cycling of the Unit 1 control room ventilation intake and exhaust. The requirement to verify the CREVS equipment actuates (fans start and dampers position) on an automatic actuation signal is contained in ITS 3.7.10 in SR 3.7.10.3 and required to be performed every 18 months. The more precise ISTS requirements eliminate the necessity for the clarification provided by the CTS footnote. As such, the proposed change does not result in a technical change to how the Unit 1control room intake and exhaust dampers are tested. The proposed change is designated administrative because it does not introduce technical changes to the surveillance testing currently performed.

Relocated (R)

R.1 CTS 3.3.3.1, Radiation Monitoring, Function 1.c for control room area monitors used to automatically initiate the Control Room Emergency Ventilation System

(CREVS) in Modes 1, 2, 3, and 4 only. Note: Requirements for these radiation monitors are retained in ITS 3.3.7 for fuel movement involving recently irradiated fuel. However, all of the Mode 1, 2, 3, and 4 Applicability requirements of CTS 3.3.3.1 for the control room area monitors including the LCO, Actions and Surveillance Requirements are relocated to the Licensing Requirements Manual (LRM).

The applicable safety analyses for all design basis accidents considered in MODES 1-4 (except LOCA) that require control room isolation and pressurization allow sufficient time for manual initiation of the emergency pressurization mode of operation of control room ventilation (i.e., control room ventilation isolation, filtered makeup, and pressurization). The safety analyses assume a 30-minute delay for control room isolation and pressurization to allow for manual action. The LOCA accident analysis assumes the control room ventilation system is automatically isolated on a CIB signal and subsequently pressurized with filtered air by manual initiation of a CREVS fan and alignment to a filtered flow path. Although the CIB signal will automatically start a CREVS fan and filtered flow path, a 30-minute delay to allow for manual initiation of a CREVS fan and filtered flow path is specifically assumed in all analyses. The 30-minute allowance is required to permit the use of a Unit 1 CREVS fan and filtration flow path which require manual operator action to place in service. The proposed BVPS ITS 3.3.7 continues to assure the assumptions of the safety analysis are met by specifying requirements for the manual system level CREVS initiation switches for each unit in Modes 1 through 4. The requirements for the CIB signal continue to be specified in ITS 3.3.2, "ESFAS Instrumentation" consistent with the ISTS.

The current safety analyses do not assume the control room area radiation monitors provide a CREVS actuation signal for any design basis accident. However, requirements for the radiation monitors to be OPERABLE are retained in case the monitors are required to support the assumptions of a fuel handling accident analysis involving the movement of recently irradiated fuel or the movement of fuel over recently irradiated fuel. The retention of requirements for fuel movement involving recently irradiated fuel is consistent with the guidance (standard TS) provided in NUREG -1431.

The BVPS specific safety analyses assumptions for manual actuation of the CREVS results in a different bases for these requirements than described in the ISTS. Due to the BVPS safety analysis reliance on manual operation, the BVPS radiation monitors do not serve as backup for a required automatic initiation for all design basis accidents. The BVPS safety analysis reliance on manual actuation reduces the importance of the automatic function provided by the BVPS control room radiation monitors. For example, the ISTS Actions for inoperable CREVS instrumentation in Modes 1-4 require CREVS equipment to be run continuously and could result in a unit shutdown. In addition, the continuous operation of the filter system will eventually expend the filter media and result in additional equipment unavailability. The ISTS Actions are more appropriate for plants that rely on automatic CREVS Actuation to mitigate all design basis accidents. Considering the BVPS specific safety analyses reliance on manual CREVS operation, the additional equipment wear and potential system unavailability, as well as the potential for a unit shutdown introduced by the ISTS Actions are overly conservative for inoperable radiation monitor(s). Therefore, BVPS is proposing to relocate the Mode 1 through 4 CTS requirements for the control room area

radiation monitors to the BVPS Unit 1 and Unit 2 LRM as appropriate. The control room area radiation monitors will continue to be maintained operable within a more appropriate licensee controlled document consistent with the NRC recommendations in the Final Policy Statement on Technical Specification Improvements for Nuclear Power Reactors, 58 FR 39132, July 22, 1993.

In addition, to not providing an automatic function assumed in any design basis accident analyses, the control room area radiation monitors do not:

1. Provide indication or alarm functions relied on by operators to take manual actions that are assumed in the safety analyses for any design basis accident described in Unit 1 UFSAR Chapter 14 or Unit 2 UFSAR Chapter 15.
2. Provide indication that is used to detect and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary, or
3. Monitor variables that have been identified as Regulatory Guide 1.97 Type A or Category I variables in the BVPS Unit 1 responses to Regulatory Guide 1.97. The BVPS Unit 1 Regulatory Guide 1.97 variable Type and Category are identified in the Unit 1 response to Generic Letter 82-33, Regulatory Guide 1.97, Revision 2, Supplemental Report, transmitted to the NRC by letter dated October 13, 1986.

The four policy statement criteria contained in 10 CFR 50.36(c)(2)(ii) for determining which regulatory requirements and operating restrictions should be included in the TS are as follows:

Criterion 1. Installed instrumentation that is used to detect and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.

Criterion 2. A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 3. A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 4. A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

Criteria 1 and 2 are not applicable to the control room area radiation monitors. Based on the BVPS safety analysis reliance on manual operation of the CREVS, Criterion 3 is not met either. Nor is the CREVS actuation function of the control room area radiation monitors modeled in the BVPS PRA as documented in the Individual Plant Examinations (IPE) and the associated PRA Update Reports for both units. In addition, the radiation monitoring actuation instrumentation for CREVS is not significant to risk because it is not involved in any accident initiation sequences. As such, the control room area radiation monitors were not identified

as being a "constraint of prime importance in limiting the likelihood or severity of accident sequences that are commonly found to dominate risk". As such, these CTS requirements have not been shown by risk to be significant to public health and safety. Therefore, Criterion 4 is not met.

Consistent with the guidance of NRC Administrative Letter 96-04, "Efficient Adoption of Improved Standard Technical Specifications," BVPS proposes to relocate TS and associated Bases that do not meet any of the four policy statement criteria to the LRM. The BVPS LRM for each unit is referenced in the BVPS Unit 1 and 2 UFSARs. Relocation of TS requirements to the LRM is acceptable as changes to these relocated documents will be adequately controlled by 10 CFR 50.59. The provisions of 10 CFR 50.59 establish adequate controls for material removed from the TS, including record retention and reporting requirements. The provisions of 10 CFR 50.59 assure future changes to the relocated material will be consistent with safe plant operation.

ITS 3.3.8 Boron Dilution Detection Instrumentation
CTS 3.3.1.1 Reactor Trip System Instrumentation
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 4 - Relaxation of Required Action)* CTS Note 7 modifies the CTS Source Range Action (#5) and states: "Plant cooldown is allowable provided the temperature change is accounted for in the calculated shutdown margin." The ITS contains a similar note that modifies the required Actions of ITS 3.3.8 Action Condition A. The ITS Note states: "Plant temperature changes are allowed provided the temperature change is accounted for in the calculated SDM." The CTS Action is revised to conform to the ITS. This changes the effect of the CTS note by providing the additional allowance to increase temperature as well as the existing CTS allowance to cooldown.

The proposed change is acceptable because it continues to assure the required Shutdown Margin (SDM) is maintained. The proposed change addresses plant operation with a positive moderator temperature co-efficient. In this case, temperature increases must be evaluated to assess the impact on the SDM. As the proposed change does not reduce the SDM required by the TS, it does not adversely affect the safe operation of the plant. In addition, the proposed change provides additional assurance that temperature increases as well as decreases will be evaluated as necessary to assure the required SDM is maintained. This change is designated as less restrictive because the CTS exception to the Actions is expanded to include temperature increases as well as decreases.

L.2 *(Category 5 – Deletion of Surveillance Requirement)* CTS Table 4.3-1 Function 6.b specifies the performance of a CHANNEL FUNCTIONAL TEST (CFT) for the required Source Range Neutron Flux channel. The test must be performed on a quarterly basis and is modified by Note 8. The Note states "Below P-6, not required to be performed for source range instrumentation prior to entering MODE 3 from MODE 2 until 12 hours after entry into MODE 3." The corresponding ITS LCO 3.3.8 does not require the performance of a CFT (or Channel Operational Test (COT) in the ISTS) of the Source Range instrument channel required operable. The CTS surveillance requirements are revised to conform to the ITS. This changes the CTS by deleting the CTS CFT surveillance requirement.

The CTS CFT and the corresponding COT in the ISTS are specific tests performed on instrument channels to verify the instrument channel performs its required trip or actuation function (i.e., a functional or operational test of the channel). Typically instrument channels used for indication only do not require a CFT or COT. Indication channels are subject to channel checks and channel calibrations. The primary purpose of performing the CTS CFT is to verify the reactor trip function associated with the Source Range instrumentation. However, the Applicability for this particular Source Range instrument function is "with all rods fully inserted and without rod withdrawal capability." In this mode of operation the Source Range instrumentation is used for indication only.

Therefore, in this condition the trip function of the Source Range instrumentation is not required operable.

The proposed change is acceptable because the deleted Surveillance Requirement is not necessary to verify that the Source Range channel is capable of performing its required function under the conditions specified in the applicability. In addition, appropriate Source Range channel surveillance requirements (i.e., channel check and channel calibration) continue to be performed in a manner and at a frequency necessary to give confidence that the Source Range instrumentation remains capable of performing its required function (i.e., indication). The required Source Range channel does not provide any required trip or actuation function in this mode of operation. Additionally, the requirements of the TS (Section 3.0) continue to provide adequate assurance that prior to entering a mode of operation where the Source Range trip function is required by an LCO, the appropriate surveillances will be performed to verify the required trip function is operable or that mode of operation will not be entered. The proposed change results in more appropriate surveillance requirements being specified consistent with the functions required operable by the LCO and the conventions of the ISTS. This change is designated as less restrictive because a Surveillance Requirement which is required in the CTS will not be required in the ITS.

More Restrictive Changes (M)

M.1 CTS Action 5, applicable to the Source Range instrumentation, requires that positive reactivity additions be suspended. The corresponding ITS Action A.1 also requires positive reactivity additions to be suspended. However, the ITS Action also requires that actions be suspended immediately. The CTS is revised to conform to the ITS. This changes the CTS by specifying that the Action is *required immediately*.

The proposed change is acceptable because it provides additional assurance the plant is placed in a safe condition when the required Source Range monitoring capability is not available. The proposed change assures prompt Action is taken when the required Source Range instrumentation is not available. As such, the proposed change does not adversely affect the safe operation of the plant. The proposed change is designated more restrictive because it imposes a more specific immediate completion time for the Action.

Removed Detail Changes (LA)

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS Table 3.3-1 specifies the requirements for the Source Range instrumentation. For Function 6.b, the CTS Table specifies the total number of channels as two. The corresponding ITS LCO 3.3.8, "Boron Dilution Detection Instrumentation" specifies one Source Range channel operable. The ITS does not describe the total number of channels but the number of channels required operable. The CTS is revised to conform to the ITS. This changes the CTS by moving the total number of channels from the specification to the ITS Bases.

The removal of these details, which are related to system design, from the TS is acceptable because this type of information is not necessary to be included in the TS to provide adequate protection of public health and safety. The TS retain the requirement for a single Source Range channel to be operable for indication purposes. The proposed change is acceptable because it is consistent with the CTS requirements for the minimum number of channels required operable (i.e., one). Although CTS Table 3.3-1 contains the total number of Source Range channels (2), the Action associated with the Source Range Function on Table 3.3-1 is only applicable when the number of operable channels is less than the minimum. As the minimum specified is one channel, the action is only applicable when both Source Range Channels are inoperable. Therefore, the CTS effectively only requires one of the two total channels to be operable. The proposed ITS 3.3.8 LCO requirement for a single operable source range channel is consistent with these CTS requirements. As such, the inclusion in CTS Table 3.3-1 of information regarding a total of two Source Range channels is design description detail that does not need to be in the TS.

In addition, this change is acceptable because the removed information will be adequately controlled in the TS Bases. Changes to the Bases are controlled by the TS Bases Control Program specified in Section 5 of the TS. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design (total number of channels) is being removed from the Technical Specifications.

LA.2 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* Unit 2 only. Unit 2 CTS Table 3.3.1 Function 6 specifies the Source Range Neutron Flux requirements. The Unit 2 requirements are modified by Note (8) that states "Alternate detectors may only be used for monitoring purposes Without Rod Withdrawal Capability until detector functions are modified to permit equivalent alarm and trip functions." The corresponding ITS LCO 3.3.8 does not contain a similar note. The CTS is revised to conform to the ISTS. This changes the CTS by moving the allowance for using alternate Source Range detectors for indication purposes from CTS Table 3.3-1 to the ITS 3.3.8 Bases.

The removal of these details, which are related to system design, from the TS is acceptable because this type of information is not necessary to be included in the TS to provide adequate protection of public health and safety. The TS still retain the requirement for a source range channel to be operable and the associated bases describe the specific operability requirements. In the ITS the bases contain the details of specific operability requirements associated with the equipment required operable by the LCO. As such, the proposed change conforms to the format and presentation of operability requirements in the ITS.

The specific function of the Source Range instrumentation in this case is to provide indication only. Unit 2 has alternate instrumentation installed that is capable of providing indication but is not connected to the Reactor Trip System and therefore has no trip capability. As such, the alternate Unit 2 instrumentation (Gamma-Metrics NE-52A and NE-52B) may provide the required Source Range indication function but may not be substituted in the Reactor Trip System. CTS Note 8 clarifies this Unit 2 design feature. It should be noted that any instrumentation used to meet the requirements of the LCO is subject to the

surveillance requirements and any other operability requirements specified in the associated bases for the LCO. Therefore, the TS prohibit the substitution of an alternate Unit 2 detector for a Source Range instrument required operable for Reactor Trip purposes. The CTS Note 8 is not required for this purpose.

The proposed change is also acceptable because the removed information will be adequately controlled in the TS Bases. Changes to the Bases are controlled by the TS Bases Control Program specified in Section 5 of the TS. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the TS

LA.3 *(Type 2 - Removing Descriptions of System Operation)* The applicable Modes in CTS Table 3.3-1 for the Source Range instrumentation specify Modes 3, 4, and 5. The Modes are modified by Note 8 (Unit 1) and Note 9 (Unit 2)." The Note states, "In this condition, source range Function does not provide reactor trip but does provide indication." The corresponding ITS LCO 3.3.8 "Boron Dilution Detection Instrumentation" does not contain a similar note. The CTS is revised to conform to the ITS. This changes the CTS by moving the description of the Source Range instrument operation requirements from the CTS Table 3.3-1 to the ITS 3.3.8 bases.

The removal of this detail, which is related to the system operation in this Mode, from the TS is acceptable because this type of information is not necessary to be included in the TS to provide adequate protection of public health and safety. The TS still retain the requirement for a source range channel to be operable and the associated bases describe the specific operability requirements (i.e., the indication requirements). In the ITS the bases contain the details of specific operability requirements associated with the equipment required operable by the LCO. As such, the proposed change conforms to the format and presentation of operability requirements in the ITS.

The proposed change is also acceptable because the removed information will be adequately controlled in the TS Bases. Changes to the Bases are controlled by the TS Bases Control Program specified in Section 5 of the TS. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system operation is being removed from the TS.

LA.4 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS Action 5 states, in part, for an inoperable Source Range channel, "Close unborated water source isolation valves (2CHS-91, 2CHS-96 and 2CHS-138) or (2CHS-37 and 2CHS-828)" for Unit 2 and "(1CH-90) or (1CH-91 and 1CH-93)" for Unit 1. ITS 3.3.8 Required Action A.2.2.1 states "Close unborated water source isolation valves" within 1 hour. The ITS does not include specific valve numbers in the specification. The ITS retains the specific valve numbers in the Bases for ITS 3.1.8, "Unborated Water Source Isolation Valves." *The Bases for ITS 3.3.8 refers to ITS 3.1.8 for the specific valves.* The CTS Action is revised to conform to the ITS. This changes the CTS by moving the specific valve ID numbers from the specification to the ITS 3.1.8 Bases.

The removal of these details, which are related to system design, from the TS is acceptable because this type of information is not necessary to be included in the TS to provide adequate protection of public health and safety. The TS still retain the requirement for the unborated water source isolation valves to be closed. Therefore, the TS continue to assure the plant is operated in a safe manner. In addition, the ITS only lists the specific valves in a single location (Bases for ITS 3.1.8) to facilitate the control of this information. The proposed change is also acceptable because the removed information will be adequately controlled in the TS Bases. Changes to the Bases are controlled by the TS Bases Control Program specified in Section 5 of the TS. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.5 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.3.1 Table 4.3-1 specifies the surveillance requirements applicable to the Source Range instrumentation. Note 15 on Table 4.3-1 modifies the Source Range instrumentation surveillance requirements by specifying "Surveillance Requirements need not be performed on alternate detectors until connected and required for OPERABILITY." The corresponding ITS LCO 3.3.8 surveillance requirements are not modified by a similar note. The CTS requirements are revised to conform to the ITS. This changes the CTS by moving the statement that surveillance requirements need not be performed on alternate detectors until connected and required for OPERABILITY from the specification to the ITS Bases.

The CTS note provides a clarification of TS requirements and is not essential to implementing the requirements specified for the Source Range instrumentation. In order to meet the requirements of any TS LCO the affected system or component must be determined to be operable via the required surveillances. There are no TS requirements to determine the operability of components or systems not used to meet the requirements of an LCO. Therefore, only the source range instruments used to meet the requirements of the LCO are subject to the TS surveillance requirements of that LCO. Therefore, alternate source range detectors would only be subject to TS surveillance requirements when they are used to meet the requirements of that LCO. The CTS note provides a clarification of this fact.

The removal of these details, which are related to the system design (extra detectors available), from the TS is acceptable because this type of information is not necessary to be included in the TS to provide adequate protection of public health and safety. The TS still retain the requirement for a Source Range channel to be OPERABLE. Therefore, the TS continue to provide adequate assurance the plant is operated in a safe manner. The proposed change is also acceptable because the removed information will be adequately controlled in the TS Bases. Changes to the Bases are controlled by the TS Bases Control Program specified in Section 5 of the TS. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 CTS LCO 3.3.1.1 requires the reactor trip system (RTS) instrumentation channels of Table 3.3-1 shall be OPERABLE. For Function 6.b, the CTS Table specifies the channels required to trip as zero. The corresponding ITS LCO 3.3.8, "Boron Dilution Detection Instrumentation" specifies one Source Range channel operable. The ITS does not describe the number of channels required to trip but the number of channels required operable. The CTS is revised to conform to the ITS. This changes the CTS by deleting the number of channels to trip from Table 3.3-1.

The proposed change is acceptable because the information being deleted is not required in the TS to assure the specified Source Range instrumentation can perform its required function. The information being deleted helps to describe the required Source Range function (i.e., indication only). No trip function is specified on the CTS Table. As such, the channels to trip information is descriptive text to help differentiate the unique indication Function specified for the Source Range from all the other reactor trip Functions specified in CTS Table 3.3-1. The affected CTS Source Range instrument requirements are being moved into a separate TS (ITS 3.3.8) that only specifies the indication requirements applicable to the Source Range instrumentation. Therefore, the information in the CTS specifying the number of channels to trip as zero is no longer required to help clarify the indication only requirements applicable to the Source Range instrumentation. As this descriptive information has no technical effect on the CTS or ITS requirements, the proposed change is designated administrative.

A.3 CTS LCO 3.3.1.1 requires the reactor trip system (RTS) instrumentation channels of Table 3.3-1 shall be OPERABLE. RTS Function 6.b Source Range Neutron Flux on Table 3.3-1 requires a minimum of one Source Range channel to be OPERABLE. ITS LCO 3.3.8 "Boron Dilution Detection Instrumentation" requires one Source Range instrument channel to be OPERABLE. The CTS is revised to conform to the ITS. This changes the CTS by moving the Source Range

instrumentation minimum channel operable requirement from the RTS Functions on Table 3.3-1 to the new ITS 3.3.8.

The purpose of proposed ITS LCO 3.3.8 is to provide an appropriate LCO requirement for the indication function of the Source Range instrumentation. No trip function is provided by the source range instrumentation with all rods inserted and not capable of being withdrawn. Therefore, the indication Function of the Source Range instrumentation is not part of the Reactor Trip System. The proposed change is acceptable because it maintains the minimum channel operable requirement of the CTS and includes that requirement in a more appropriate LCO for the required indication function. This change is designated as administrative because the technical requirement for a single channel of operable Source Range instrumentation for indication purposes is not changed.

A.4 Unit 2 only. Unit 2 CTS Table 3.3.1 Function 6 specifies the Source Range Neutron Flux requirements. The Unit 2 requirements are modified by Note (8) that states "Alternate detectors may only be used for monitoring purposes Without Rod Withdrawal Capability until detector functions are modified to permit equivalent alarm and trip functions." The corresponding ITS LCO 3.3.8 does not contain a similar note. The CTS is revised to conform to the ISTS. This changes the CTS by deleting the portion of the note that states " until detector functions are modified to permit equivalent alarm and trip functions."

The specific function of the Source Range instrumentation in this case is to provide indication only. Unit 2 has alternate instrumentation installed that is capable of providing indication but is not connected to the Reactor Trip System and therefore has no trip capability. As such, the alternate Unit 2 instrumentation (Gamma-Metrics NE-52A and NE-52B) may provide the required Source Range indication function but may not be substituted in the Reactor Trip System. CTS Note 8 clarifies this Unit 2 design feature. It should be noted that any instrumentation used to meet the requirements of the LCO is subject to the surveillance requirements and any other operability requirements specified in the associated bases for the LCO. Therefore, the TS would prohibit the substitution of an alternate Unit 2 detector for a Source Range instrument required operable for Reactor Trip purposes without the clarification provided by Note 8. The Unit 2 CTS Note 8 is not required for this purpose. In addition, the indication only requirements for the Source Range instrumentation are being moved into a separate TS (ITS 3.3.8) along with the allowance to use alternate detectors for indication specified in Note 8. As such, the proposed change is acceptable because the deletion of the affected information in CTS Note 8 has no technical impact and due to the separate LCO for Source Range indication requirements the information is no longer useful as a clarification. The proposed change is designated administrative because it has no technical impact on the TS.

A.5 CTS LCO 3.3.1.1 requires the reactor trip system (RTS) instrumentation channels of Table 3.3-1 shall be OPERABLE. CTS Table 3.3-1 Function 6.b, Source Range Neutron Flux, requires a minimum of one Source Range channel to be OPERABLE. For an inoperable Source Range channel CTS Action 5 must be entered. The Action requires the suspension of operations involving positive reactivity additions, closing of the unborated water source isolation valves within 1 hour, and performing Shutdown Margin (SDM) verification within 1 hour and once per 12 hours thereafter. The corresponding ITS LCO 3.3.8 "Boron Dilution

Detection Instrumentation" Condition A.1 specifies an alternate Action (A.2.1) within the 1 hour allowed by the CTS to close unborated water source isolation valves. The alternate ITS Action A.2.1 provides the option to restore the inoperable Source Range channel to operable status within 1 hour instead of closing the unborated water source isolation valves. The CTS Actions are revised to conform to the ITS. This changes the CTS by providing an alternate Action to closing the unborated water source isolation valves.

The purpose of the new ITS Required Action A.2.1 is to clarify the option to restore the required Source Range channel to operable status within an hour in lieu of closing the required valves. The restoration of the required channel will result in meeting the LCO requirement and exiting the Actions. The option provided by the ITS Action does not introduce a technical change to the CTS Actions. The ITS Actions continue to require that the unborated water source isolation valves be closed within 1 hour. However, this Action is not required if the requirements of the LCO are met within this time. Once the requirements of the LCO are met, the ability to monitor core reactivity and detect an unplanned dilution event is restored. Restoration of systems or components to meet the requirements of an LCO is always an option in the TS. As such, the proposed change does not affect the technical requirements of the CTS and is considered a clarification. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.6 CTS Table 3.3-1 for Function 6.b Source Range Neutron Flux requires a minimum of one channel to be operable and specifies that Action 5 is applicable. CTS Action 5 in part states "With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement...." The corresponding ITS LCO 3.3.8, "Boron Dilution Detection Instrumentation," states that "One Source Range channel shall be OPERABLE." ITS Condition A applies when the required channel is inoperable. The CTS Action is revised to conform to the ITS Action. This changes the CTS by reformatting the Action requirements consistent with the ISTS presentation of Actions.

This change is acceptable because the ITS requirements are consistent with the CTS requirements. Both the CTS and ITS Action are initiated when the single required Source Range channel becomes inoperable. The CTS Action text is converted to the ITS Action Condition format without introducing a technical change to the CTS. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.7 CTS Action # 5.c references Surveillance Requirements 4.1.1.1.1 or 4.1.1.2, as applicable to determine Shutdown Margin. The corresponding ITS Required Action A.2.2.2 only references a single surveillance (SR 3.1.1.1) to determine Shutdown Margin. The CTS is revised to conform to the ITS. This changes the CTS Action by only referencing a single surveillance instead of two surveillances for determining Shutdown Margin.

The proposed change is acceptable because the two CTS surveillance requirements for determining Shutdown Margin are combined into one surveillance in the ITS (in Section 3.1, Reactivity Control Systems). The ITS only has one specification for Shutdown Margin (ITS 3.1.1) with one surveillance for Shutdown Margin (SR 3.1.1.1). The combination of the CTS surveillance requirements into a single ITS requirement represents a change in the format and presentation of the

CTS requirements and does not introduce a technical change. The Shutdown Margin continues to be verified in the same manner as before. Therefore, the proposed change is designated administrative.

A.8 CTS Table 4.3-1 contains the surveillance requirements for the affected Source Range instrumentation (Function 6b). In addition to specifying the surveillance requirements, the CTS Table also repeats the list of Functions and the applicable Modes for each Function. CTS Table 4.3-1 specifies a Channel Calibration on a refueling (18 month) frequency and a Channel Check every shift or 12 hours. The corresponding ITS 3.3.8 surveillance requirements (Channel Calibration and Channel Check) are not listed in a table format. The ITS 3.3.8 surveillances are presented in the standard format without using a Table. The CTS is revised to conform to the ITS. This changes the CTS by eliminating Table 4.3-1 for the affected Source Range instrument function surveillances. This DOC is intended to address the elimination of the CTS Table format. Other DOCs specified in the markup of Table 4.3-1 and Table 3.3-1 address technical changes to the CTS requirements.

The proposed change is acceptable because the technical requirements contained in Table 4.3-1 are retained in proposed ITS 3.3.8 surveillances without the need of a separate table. The CTS Table lists the specific Functions, the required surveillances, and applicable Modes. ITS 3.3.8 continues to specify the Source Range instrument function but specifies the applicable Modes and surveillances consistent with the more typical presentation of these requirements in the ISTS (i.e., no table). The Table format is more useful when the requirements are different for each Function listed on the Table. Therefore, the technical requirements specified on CTS Table 4.3-1 are retained in the ITS format and elimination of CTS Table 4.3-1 does not result in a technical change to the CTS requirements. The proposed change is designated administrative because it does not result in a technical change to the CTS requirements.

ENCLOSURE 4

DETERMINATIONS OF
NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC)
FOR
CHANGES MADE TO THE BVPS
CURRENT TECHNICAL SPECIFICATIONS (CTS)

Introduction
The determinations of NSHC contained within this Enclosure consist of two general types. This enclosure contains "Generic" NSHC developed for the categories of change identified *in Enclosure 3 (Changes to the CTS) and "Specific"* NSHC *for those "Less Restrictive"* changes that do not fit within one of the generic determinations of NSHC listed below. Each specific NSHC is identified by the associated Technical Specification and discussion of change (DOC) number from Enclosure 3.

Enclosure Contents

NO SIGNIFICANT HAZARDS DETERMINATION
FOR

ADMINISTRATIVE CHANGES

The Beaver Valley Power Station (BVPS) is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve reformatting, renumbering, and rewording of Technical Specifications with no change in intent. These changes, since they do not involve technical changes to the Technical Specifications, are administrative.

This type of change is associated with the movement of requirements within the Technical Specifications, or with the modification of wording or format that does not affect the technical content of the current Technical Specifications. In addition, these changes include all non-technical modifications of requirements to provide consistency with the ISTS in NUREG-1431. Administrative changes do not add, delete, or relocate any technical requirements of the current Technical Specifications.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do 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, renumbering, and rewording the existing Technical Specifications. The reformatting, renumbering, and rewording process involves no technical changes to the existing Technical Specifications. As such, this change is administrative in nature and does not affect initiators of analyzed events or assumed mitigation of accident or transient events. 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 a physical alteration of the plant (no new or different type of equipment will be installed) or changes in methods governing normal plant operation. The proposed change will not impose any new or eliminate any old requirements. Therefore, 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 effect on any safety analyses assumptions. This change is administrative in nature. Therefore, the change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR

MORE RESTRICTIVE CHANGES

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve adding more restrictive requirements to the existing Technical Specifications by either making current requirements more stringent or by adding new requirements that currently do not exist.

These changes include such things as additional commitments that decrease allowed outage times, increase the frequency of surveillances, impose additional surveillances, increase the scope of specifications to include additional plant equipment, increase the applicability of specifications, or provide additional actions. These changes are generally made to conform to the ISTS in NUREG-1431 and are only included in the Technical Specifications when they serve to enhance the safe operation of the plant and are consistent with the applicable plant specific design basis and safety analysis assumptions.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do 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 stringent 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 assumptions relative to mitigation of an accident or transient event. The more restrictive requirements continue to ensure process variables, structures, systems, and components are maintained consistent with the safety analyses and licensing basis. 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 a physical alteration of the plant (no new or different type of equipment will be installed) or changes in methods governing normal plant operation. The proposed change does revise Technical Specification requirements. However, these changes are consistent with the assumptions in the safety analyses and licensing basis. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
MORE RESTRICTIVE CHANGES
(continued)

3. **Does this change involve a significant reduction in a margin of safety?**

The imposition of more restrictive requirements either has no effect on or increases the margin of plant safety. Each change in this category is, by definition, providing additional restrictions to enhance plant safety. The change maintains requirements within the safety analyses and licensing basis. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR

RELOCATED SPECIFICATIONS

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve relocating existing Technical Specification LCOs to licensee controlled documents.

FirstEnergy Nuclear Operating Company has evaluated the current Technical Specifications using the criteria set forth in 10 CFR 50.36. Specifications identified by this evaluation that did not meet the retention requirements specified in the regulation are not included in the ISTS conversion submittal. These specifications have been relocated from the current Technical Specifications to an appropriate licensee controlled document.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do 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 and surveillances for structures, systems, components or variables that do not meet the criteria of 10 CFR 50.36 *(c)(2)(ii) for inclusion in Technical Specifications as identified in the Application of* Selection Criteria to the Beaver Valley Technical Specifications. The affected structures, systems, components or variables are not assumed to be initiators of analyzed events and are not assumed to mitigate accident or transient events. The requirements and surveillances for these affected structures, systems, components or variables will be relocated from the Technical Specifications to an appropriate administratively controlled document which will be maintained pursuant to 10 CFR 50.59. As such, the relocation of requirements will only affect the level of regulatory control applicable to changes to the requirements. 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 a physical alteration of the plant (no new or different type of equipment will be installed) or change in the methods governing normal plant operation. The proposed change will not impose or eliminate any requirements and adequate control of existing requirements will be maintained. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
RELOCATED SPECIFICATIONS
(continued)

3. **Does this change involve a significant reduction in a margin of safety?**

The proposed change does not reduce a margin of safety. The affected requirements are not being changed and are not specific assumptions of any design basis safety analysis, as indicated by the fact that the requirements do not meet the 10 CFR 50.36 criteria for retention in the Technical Specifications. The affected requirements are relocated without change and any future changes to these requirements will be evaluated per 10 CFR 50.59. The provisions of 10 CFR 50.59 provide adequate assurance that future changes to the relocated material will not affect the safe operation of the plant. In addition, the proposed change is consistent with the application of the 10 CFR 50.36 criteria endorsed by the NRC, which provides additional assurance that the proposed change will not adversely affect the safe operation of the plant. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES -

REMOVED DETAIL

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve moving details out of the Technical Specifications and into the Technical Specifications Bases, the Updated Final Safety Analyses Report (UFSAR), the Licensing Requirements manual (LRM) or other documents under regulatory control such as the Quality Assurance Program. The removal of this information is considered to be less restrictive because the Technical Specification change process no longer controls the information. Typically, the affected information is descriptive detail and the removal of this information conforms to the NRC approved content and format of the ISTS in NUREG-1431.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do 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 certain details from the Technical Specifications to other documents under regulatory control. The Technical Specification Bases, UFSAR, and Licensing Requirement Manual will be maintained in accordance with 10 CFR 50.59. In addition to 10 CFR 50.59 provisions, the Technical Specification Bases are subject to the change control provisions in the Administrative Controls Chapter of the Technical Specifications. The UFSAR is subject to the change control provisions of 10 CFR 50.71(e). Other documents used to contain the removed information are subject to controls imposed by Technical Specifications or regulations. As such, the relocation of descriptive details will only affect the level of regulatory control applicable to changes to the information moved. Changes to the affected information will continue to be evaluated in accordance with 10 CFR 50.59. As such, no significant increase in the probability or consequences of an accident previously evaluated will result. 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 a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operations. The proposed change will not impose or eliminate any requirements, and adequate control of the information will be maintained. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES - REMOVED DETAIL
(continued)

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 effect on any safety analysis assumptions. In addition, the descriptive details to be moved from the Technical Specifications to other documents are not being changed. Since any future changes to these details will be evaluated under the applicable regulatory change control mechanism, no significant reduction in a margin of safety will be allowed. A significant reduction in the margin of safety is not associated with the elimination of the 10 CFR 50.92 requirement for NRC review and approval of future changes to the relocated details. The proposed change provides consistency with the level of detail in the Westinghouse Standard Technical Specifications, NUREG-1431, issued and approved by the NRC Staff, which provides additional assurance that the proposed change has been evaluated and determined not to introduce a significant reduction in the margin of safety. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR

LESS RESTRICTIVE CHANGES
CATEGORY 1

RELAXATION OF LCO REQUIREMENTS

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve relaxation of the current Technical Specification (CTS) Limiting Conditions for Operation (LCOs) such as the elimination of specific items from the LCO or Tables referenced in the LCO, or the addition of exceptions to the LCO.

These changes reflect the ISTS approach to provide LCO requirements that specify the protective conditions that are required to meet safety analysis assumptions for required features. These conditions replace the lists of specific devices used in the CTS to describe the requirements needed to meet the safety analysis assumptions. The ISTS also includes LCO Notes that allow exceptions to the LCO for the performance of testing or other operational needs. The ISTS provides the protection required by the safety analysis and provides flexibility for meeting the conditions without adversely affecting operations since equivalent features are required to be OPERABLE. The proposed changes may also be consistent with the current licensing basis, as identified in the discussion of individual changes. These changes are generally made to conform to NUREG-1431 or more accurately reflect the current licensing basis and have been evaluated to not be detrimental to plant safety.

The proposed changes are acceptable because they have been determined to be applicable to the BVPS design and consistent with the assumptions of the BVPS safety analyses. The effect of each change relative to the safe operation of the plant was evaluated in the discussion associated with the change. In addition, the proposed changes that are consistent with the ISTS have been previously evaluated by Westinghouse Electric Corp., the Westinghouse Owners Group, NEI, and the NRC in developing the ISTS and found not to adversely affect the safe operation of Westinghouse plants. In the Final Policy Statement on Technical Specification Improvements for Nuclear Power Reactors (58 FR 39132, 7/22/93), the NRC encourages licensees to update their Technical Specifications consistent with their vendor-specific ISTS and endorses the implementation of these new Technical Specifications by stating that implementation of the ISTS is expected to produce an improvement in the safety of nuclear power plants. Furthermore, the provisions of the ISTS have been adopted by many Westinghouse plants over the last 10 years. The combined operating experience of the plants that have implemented the ISTS also serves to demonstrate that the provisions of the ISTS do not adversely affect the safe operation of Westinghouse plants.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 1
RELAXATION OF LCO REQUIREMENTS
(continued)

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

   The proposed change provides less restrictive LCO requirements for operation of the facility. The effect of the change relative to the safe operation of the plant was evaluated in the discussion associated with the change. The change has been determined not to adversely affect the safe operation of the plant. In addition, changes that are consistent with the ISTS have been previously evaluated and found not to adversely affect the safe operation of Westinghouse plants. Based on the conclusions of the plant specific evaluation associated with the change and the evaluation performed in developing the ISTS, the proposed change does not result in operating conditions that will significantly increase the probability of initiating an analyzed event. In addition, the proposed change was evaluated to assure that it does not alter the safety analysis assumptions relative to mitigation of an accident or transient event and that the resulting requirements continue to ensure the necessary process variables, structures, systems, and components are maintained operable consistent with the safety analyses. As such the proposed change also does not result in operating conditions that will significantly increase the consequences of an analyzed event. Therefore, the 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 a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. The proposed change does impose different requirements. However, the change is consistent with the assumptions in the safety analyses and licensing basis. Therefore, 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 effect of the change relative to the safe operation of the plant was evaluated in the discussion associated with the change. The change has been determined not to adversely affect the safe operation of the plant. In addition, changes that are consistent with the ISTS have been previously evaluated and found not to adversely affect the safe operation of Westinghouse plants. Based on the conclusions of the plant specific evaluation associated with each change and the evaluation performed in developing the ISTS, the change has been determined to maintain plant operation within the assumptions of the applicable safety analyses. As such, the change does not result in operating conditions that significantly reduce any margin of safety. Therefore, the change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 2

RELAXATION OF APPLICABILITY

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve relaxation of the applicability of current Technical Specification (CTS) Limiting Conditions for Operation (LCOs) by reducing the conditions under which the LCO requirements must be met.

Technical Specification Applicability can be specific defined terms of reactor conditions or more general (e.g., all MODES or any operating MODE). Such generalized applicability conditions are not contained in ISTS, therefore the ISTS eliminates such Applicability requirements replacing them with ISTS defined MODES or specific reactor or plant conditions that are consistent with the safety analysis assumptions for operability of the required features.

Applicability requirements may also be eliminated during conditions for which the safety function of the specified safety system is met because the feature is performing its intended safety function (e.g. actuation instrumentation may no longer be required for an isolation valve already in its required safety position). Deleting applicability requirements that are indeterminate or that are inconsistent with the application of accident analyses assumptions is acceptable because when LCOs cannot be met, the Technical Specifications may be satisfied by exiting the applicability which takes the plant out of the conditions that require the safety system to be OPERABLE.

These changes provide the protection required by the safety analysis and provide flexibility for meeting limits by restricting the application of the limits to the conditions assumed in the safety analyses. The proposed changes may also be consistent with the current licensing basis, as identified in the discussion of individual changes. These changes are generally made to conform to NUREG-1431 or more accurately reflect the current licensing basis and have been evaluated to not be detrimental to plant safety.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 2
RELAXATION OF APPLICABILITY
(continued)

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

   The proposed change relaxes the conditions under which the LCO requirements for operation of the facility must be met. These less restrictive applicability requirements for the LCOs do not result in operation that will increase the probability of initiating an analyzed event and do not alter assumptions relative to mitigation of an accident or transient event in that the requirements continue to ensure that process variables, structures, systems, and components are maintained in the MODES and other specified conditions assumed in the safety analyses and licensing basis. 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 a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. The proposed change does impose different requirements. However, the requirements are consistent with the assumptions in the safety analyses and licensing basis. Therefore, 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 relaxed applicability of LCO requirements does not involve a significant reduction in the margin of safety. This change has been evaluated to ensure that the LCO requirements are applied in the MODES and specified conditions assumed in the safety analyses and licensing basis. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 3

RELAXATION OF COMPLETION TIME

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve relaxation of the Completion Times for Required Actions in the current Technical Specifications (CTS).

Upon discovery of a failure to meet a Limiting Condition for Operation (LCO), the ISTS specifies times for completing Required Actions of the associated Technical Specification Conditions. Required Actions of the associated Conditions are used to establish remedial measures that must be taken within specified Completion Times (referred to as Allowed Outage Times (AOTs) in the CTS). These times define limits during which operation in a degraded condition is permitted. Adopting Completion Times from the ISTS is acceptable because the Completion Times take into account the operability status of the redundant systems of required features, the capacity and capability of remaining features, a reasonable time for repairs or replacement of required features, and the low probability of a design basis accident occurring during the repair period. In addition, the ISTS provides consistent Completion Times for similar conditions. These changes are generally made to conform to NUREG-1431 and have been evaluated to not be detrimental to plant safety.

The effect of each change relative to the safe operation of the plant was evaluated in the discussion associated with the change. In addition, the proposed changes that are consistent with the ISTS have been previously evaluated by Westinghouse Electric Corp., the Westinghouse Owners Group, NEI, and the NRC in developing the ISTS and found not to adversely affect the safe operation of Westinghouse plants. In the Final Policy Statement on Technical Specification Improvements for Nuclear Power Reactors (58 FR 39132, 7/22/93), the NRC encourages licensees to update their Technical Specifications consistent with their vendor-specific ISTS and endorses the implementation of these new Technical Specifications by stating that implementation of the ISTS is expected to produce an improvement in the safety of nuclear power plants. Furthermore, the provisions of the ISTS have been adopted by many Westinghouse plants over the last 10 years. The combined operating experience of the plants that have implemented the ISTS also serves to demonstrate that the provisions of the ISTS do not adversely affect the safe operation of Westinghouse plants.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 3
RELAXATION OF COMPLETION TIME
(continued)

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

   The proposed change provides a less restrictive Completion Time for a Required Action. The effect of the change relative to the safe operation of the plant was evaluated in the discussion associated with the change. The change has been determined not to adversely affect the safe operation of the plant. Required Actions and their associated Completion Times are not initiating conditions for any accident previously evaluated. In addition, changes that are consistent with the ISTS have been previously evaluated and found not to adversely affect the safe operation of Westinghouse plants or the initiation of any accident previously evaluated. Based on the conclusions of the plant specific evaluation associated with the change and the evaluation performed in developing the ISTS, the proposed change does not result in operating conditions that will significantly increase the probability of initiating an analyzed event. In addition, the proposed change was evaluated to assure that it does not alter the safety analysis assumptions relative to mitigation of an accident or transient event and that the resulting requirements continue to ensure the necessary process variables, structures, systems, and components are maintained operable consistent with the safety analyses or that the plant is placed in an operating Mode where the process variable, structure, system, or component is no longer required operable. The consequences of an analyzed accident during the relaxed Completion Time are the same as the consequences during the existing Completion Time (i.e., initial plant conditions are the same). As a result, the consequences of any accident previously evaluated are not significantly increased. As such, the proposed change also does not result in operating conditions that will significantly increase the consequences of an analyzed event. Therefore, the 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 a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the method governing normal plant operation. The Required Actions and associated Completion Times in the ISTS have been evaluated to ensure that no new accident initiators are introduced. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 3
RELAXATION OF COMPLETION TIME
(continued)

3. **Does this change involve a significant reduction in a margin of safety?**

The effect of the change relative to the safe operation of the plant was evaluated in the discussion associated with the change. The change has been determined not to adversely affect the safe operation of the plant. In addition, changes that are consistent with the ISTS have been previously evaluated and found not to adversely affect the safe operation of Westinghouse plants. Based on the conclusions of the plant specific evaluation associated with each change and the evaluation performed in developing the ISTS, the change has been determined to maintain plant operation within the assumptions of the applicable safety analyses. As such, the change does not result in operating conditions that significantly reduce any margin of safety. Therefore, the change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 4

RELAXATION OF REQUIRED ACTION

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve relaxation of the Required Actions in the current Technical Specifications (CTS).

Upon discovery of a failure to meet a Limiting Condition for Operation (LCO), the ISTS specifies Required Actions to complete for the associated Conditions. Required Actions of the associated Conditions are used to establish remedial measures that must be taken in response to the degraded conditions. These actions minimize the risk associated with continued operation while providing time to repair inoperable features. Some of the Required Actions are modified to place the plant in a MODE in which the LCO does not apply. Adopting Required Actions from the ISTS is acceptable because the Required Actions take into account the operability status of redundant systems of required features, the capacity and capability of the remaining features, and the compensatory attributes of the Required Actions as compared to the LCO requirements. These changes are generally made to conform to NUREG-1431 and have been evaluated to not be detrimental to plant safety.

The effect of each change relative to the safe operation of the plant was evaluated in the discussion associated with the change. In addition, the proposed changes that are consistent with the ISTS have been previously evaluated by Westinghouse Electric Corp., the Westinghouse Owners Group, NEI, and the NRC in developing the ISTS and found not to adversely affect the safe operation of Westinghouse plants. In the Final Policy Statement on Technical Specification Improvements for Nuclear Power Reactors (58 FR 39132, 7/22/93), the NRC encourages licensees to update their Technical Specifications consistent with their vendor-specific ISTS and endorses the implementation of these new Technical Specifications by stating that implementation of the ISTS is expected to produce an improvement in the safety of nuclear power plants. Furthermore, the provisions of the ISTS have been adopted by many Westinghouse plants over the last 10 years. The combined operating experience of the plants that have implemented the ISTS also serves to demonstrate that the provisions of the ISTS do not adversely affect the safe operation of Westinghouse plants.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 4
RELAXATION OF REQUIRED ACTION
(continued)

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

   The proposed change provides less restrictive Required Actions for operation of the facility. The effect of the change relative to the safe operation of the plant was evaluated in the discussion associated with the change. The change has been determined not to adversely affect the safe operation of the plant. Required Actions are not initiating conditions for any accident previously evaluated. In addition, changes that are consistent with the ISTS have been previously evaluated and found not to adversely affect the safe operation of Westinghouse plants. Based on the conclusions of the plant specific evaluation associated with the change and the evaluation performed in developing the ISTS, the proposed change does not result in operating conditions that will significantly increase the probability of initiating an analyzed event. The proposed change was also evaluated to assure that it does not alter the safety analysis assumptions relative to mitigation of an accident or transient event and that the resulting requirements continue to ensure the necessary process variables, structures, systems, and components are maintained operable consistent with the safety analyses or that the plant is placed in an operating Mode where the process variable, structure, system, or component is no longer required operable. In addition, the proposed change provides the appropriate remedial actions to be taken in response to the degraded condition considering the operability status of the redundant systems of required features, and the capacity and capability of remaining features while minimizing the risk associated with continued operation. As such the proposed change also does not result in operating conditions that will significantly increase the consequences of an analyzed event. Therefore, the 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 a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. The Required Actions in the ISTS have been evaluated to ensure that no new accident initiators are introduced. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 4
RELAXATION OF REQUIRED ACTION
(continued)

3. **Does this change involve a significant reduction in a margin of safety?**

The effect of the change relative to the safe operation of the plant was evaluated in the discussion associated with the change. The change has been determined not to adversely affect the safe operation of the plant. In addition, changes that are consistent with the ISTS have been previously evaluated and found not to adversely affect the safe operation of Westinghouse plants. Based on the conclusions of the plant specific evaluation associated with each change and the evaluation performed in developing the ISTS, the change has been determined to maintain plant operation within the assumptions of the applicable safety analyses. As such, the change does not result in operating conditions that significantly reduce any margin of safety. Therefore, the change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 5

DELETION OF SURVEILLANCE REQUIREMENT

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve deletion of Surveillance Requirements in the current Technical Specifications (CTS).

The CTS require safety systems to be tested and verified Operable prior to entering applicable operating conditions. The ISTS eliminates unnecessary CTS Surveillance Requirements that do not contribute to verification that the equipment used to meet the Limiting Condition for Operation (LCO) can perform its required functions. Therefore, appropriate equipment continues to be tested in a manner and at a frequency necessary to give confidence that the equipment can perform its assumed safety function. These changes are generally made to conform to NUREG-1431 and have been evaluated to not be detrimental to plant safety.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do 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 Surveillance Requirements. Surveillances are not initiators to any accident previously evaluated. Consequently, the probability of an accident previously evaluated is not significantly increased. The equipment specified in the LCO is still required to be OPERABLE and capable of performing the accident mitigation functions assumed in the accident analysis. As a result, the consequences of any accident previously evaluated are not significantly affected. 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 a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. The remaining Surveillance Requirements are consistent with industry practice and are considered to be sufficient to prevent the removal of the subject Surveillances from creating a new or different type of accident. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 5
DELETION OF SURVEILLANCE REQUIREMENT
(continued)

3. **Does this change involve a significant reduction in a margin of safety?**

The deleted Surveillance Requirements do not result in a significant reduction in the margin of safety. The change has been evaluated to ensure that the deleted Surveillance Requirements are not necessary for verification that the equipment used to meet the LCO can perform its required functions. Therefore, appropriate equipment continues to be tested in a manner and at a frequency necessary to give confidence that the equipment can perform its assumed safety function. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 6

RELAXATION OF SURVEILLANCE REQUIREMENT ACCEPTANCE CRITERIA

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve the relaxation of Surveillance Requirements acceptance criteria in the current Technical Specifications (CTS).

The CTS require safety systems to be tested and verified Operable prior to entering applicable operating conditions. The ISTS eliminates or relaxes the Surveillance Requirement acceptance criteria that do not contribute to verification that the equipment used to meet the Limiting Condition for Operation (LCO) can perform its required functions. For example, the ISTS allows some Surveillance Requirements to verify Operability under actual or test conditions. Adopting the ISTS allowance for "actual" conditions is acceptable because required features cannot distinguish between an "actual" signal and a "test" signal. Also included are changes to CTS requirements that are replaced in the ITS with separate and distinct testing requirements which, when combined, include Operability verification of all Technical Specification required components for the features specified in the CTS. Adopting this format preference in the ISTS is acceptable because Surveillance Requirements that remain include testing of all previous features required to be verified OPERABLE. Changes that provide exceptions to Surveillance Requirements to provide for variations that do not affect the results of the test are also included in this category. These changes are generally made to conform to NUREG-1431 and have been evaluated to not be detrimental to plant safety.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do 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 relaxes the acceptance criteria of Surveillance Requirements. Surveillances are not initiators to any accident previously evaluated. Consequently, the probability of an accident previously evaluated is not significantly increased. The equipment being tested is still required to be OPERABLE and capable of performing the accident mitigation functions assumed in the accident analysis. As a result, the consequences of any accident previously evaluated are not significantly affected. Therefore, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 6
RELAXATION OF SURVEILLANCE REQUIREMENT ACCEPTANCE CRITERIA
(continued)

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 a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. Therefore, 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 relaxed acceptance criteria for Surveillance Requirements do not result in a significant reduction in the margin of safety. The relaxed Surveillance Requirement acceptance criteria have been evaluated to ensure that they are sufficient to verify that the equipment used to meet the LCO can perform its required functions. Therefore, appropriate equipment continues to be tested in a manner that gives confidence that the equipment can perform its assumed safety function. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 7

RELAXATION OF SURVEILLANCE FREQUENCY

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve the relaxation of Surveillance Frequencies in the current Technical Specifications (CTS).

CTS and ISTS Surveillance Frequencies specify time interval requirements for performing surveillance testing. Increasing the time interval between Surveillance tests in the ISTS results in decreased equipment unavailability due to testing which also increases equipment availability. In general, the ISTS contain test frequencies that are consistent with industry practice or industry standards for achieving acceptable levels of equipment reliability. Adopting testing practices specified in the ISTS is acceptable based on similar design, like-component testing for the system application and the availability of other Technical Specification requirements which provide regular checks to ensure limits are met. Relaxation of Surveillance Frequency may also include changes such as the addition of Surveillance Notes which allow testing to be delayed until appropriate unit conditions for the test are established, or exempt testing in certain MODES or specified conditions in which the testing can not be performed.

Reduced testing can result in a safety enhancement because the unavailability due to testing is reduced and; in turn, reliability of the affected structure, system or component should remain constant or increase. Reduced testing is acceptable where operating experience, industry practice or the industry standards such as manufacturers' recommendations have shown that these components usually pass the Surveillance when performed at the specified interval, therefore the frequency is acceptable from a reliability standpoint. *Surveillance Frequency changes to incorporate alternate train testing have* been shown to be acceptable where other qualitative or quantitative test requirements are required which are established predictors of system performance. Surveillance Frequency extensions can be based on NRC-approved topical reports. The NRC staff has accepted topical report analyses that bound the plant-specific design and component reliability assumptions. These changes are generally made to conform to NUREG-1431 and have been evaluated to not be detrimental to plant safety.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do 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 relaxes Surveillance Frequencies. The relaxed Surveillance Frequencies have been established based on achieving acceptable levels of equipment reliability.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 7
RELAXATION OF SURVEILLANCE FREQUENCY
(continued)

Consequently, equipment which could initiate an accident previously evaluated will continue to operate as expected and the probability of the initiation of any accident previously evaluated will not be significantly increased. The equipment being tested is still required to be OPERABLE and capable of performing any accident mitigation functions assumed in the accident analysis. As a result, the consequences of any accident previously evaluated are not significantly affected. 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 a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. Therefore, 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 relaxed Surveillance Frequencies do not result in a significant reduction in the margin of safety. The relaxation in the Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. Thus, appropriate equipment continues to be tested at a Frequency that gives confidence that the equipment can perform its assumed safety function when required. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR

SPECIFIC LESS RESTRICTIVE CHANGES

None.