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SUBJECT: Responds to 970606 RAI re improved TS Section 3.6, "Containment Sys." Enclosed responses reflect 970724 telcon w/NRC staff.

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10CFR50.90 102-04015- JML/SAB/TNW
September 18, 1997

U. S. Nuclear Regulatory Commission
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Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2, and 3
Docket Nos. STN 50-528/529/530
Response to NRC Request for Additional Information (RAI)
for Improved Technical Specification (ITS)
Section 3.6, "Containment Systems"

Dear Sirs:

Enclosed please find the response to your request for additional information dated June 6, 1997, regarding ITS Section 3.6, "Containment Systems." The NRC "Description of Issues" and the corresponding PVNGS responses are provided as Enclosure 1 in a tabular format similar to the RAI. The enclosed responses reflect the telephone conversation with members of your staff on July 24, 1997. ITS 3.6 submittal pages, as modified by the responses to the RAI, are provided as Enclosure 2.

Generic change TSTF numbers 17, 45, 46, 52, and 78 to NUREG 1432, revision 1 were incorporated into ITS Section 3.6.

Please contact Mr. Scott Bauer at (602) 393-5978 if you have any questions or would like additional information regarding this matter.

Sincerely,

James M Levine

A001

JML/SAB/TNW/mah

cc:	E. W. Merschoff	(w/o enclosure 2)	
	K. E. Perkins	(w/o enclosure 2)	
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	C. R. Thomas	(with enclosures)	(2 copies)
	A. V. Godwin	(with enclosures)	

Enclosure 1 Response to Request for Additional Information
Enclosure 2 ITS Section 3.6, "Containment Systems"

STATE OF ARIZONA)
) ss.
COUNTY OF MARICOPA)

I, J. M. Levine, represent that I am Senior Vice President - Nuclear, Arizona Public Service Company (APS), that the foregoing document has been signed by me on behalf of APS with full authority to do so, and that to the best of my knowledge and belief, the statements made therein are true and correct.

J. M. Levine

Sworn To Before Me This 18 Day Of Sept., 1997.

"OFFICIAL SEAL"
A. K. Krainik
Notary Public-Arizona
Maricopa County
My Commission Expires 5/6/2000

Notary Public

My Commission Expires

____

ENCLOSURE 1

Response to Request for Additional Information

9710060024

PVNGS ITS 3.6.1 CONTAINMENT

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.1-1	L.1	CTS 4.6.1.1.b	CTS 4.6.1.1.b states, "By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3." The DOC states this is "less restrictive". ITS 3.6.2 is the ITS equivalent of CTS 3.6.1.3 and contains all the CTS requirements for operability of the containment air locks. This CTS requirement is also located in ITS Bases B.3.6.1, BACKGROUND item (b). Any changes to the Bases are controlled by the Technical Specification Bases Control Program of Section 5.5.14. This change is a combination of administrative and less restrictive (LA). COMMENTS: Provide additional discussion and justification for this administrative/less restrictive (LA) change.	DOC L.1 has been deleted and DOC A.7 has been added to discuss this change. This change was treated as administrative only since there was no relaxation in requirements.

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.1-2	JFD2	ITS B3.6.1 Bases SR 3.6.1.2 ITS B3.6.1 Bases REFERENCES	ITS B3.6.1 Bases SR 3.6.1.2 deletes the sentence: "Testing and frequency are consistent with the recommendations of Regulatory Guide 1.35 (Ref. 4)." No justification is provided, except for a general plant nomenclature type justification. The deleted statement however, is in the CTS Bases Section 3/4.6.1.6 and "Ref. 4" is retained in the ITS B3.6.1 Bases REFERENCES Section. COMMENTS: Return the statement to the ITS Bases or provide a discussion and justification for ITS deletion.	The PVNGS Tendon Surveillance Program was developed using Regulatory Guide 1.35 rev 1 and rev 3 draft as guidance. The statement regarding consistency with the Regulatory Guide will be returned to the Bases.

PVNGS ITS 3.6.1 CONTAINMENT

ITEM NO	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.1-3	JFD 3	CTS 4.6.1.2 STS SR 3.6.1.1 ITS SR 3.6.1.1 ITS B3.6.1 Bases	CTS 4.6.1.2 requires leak rate testing in accordance with the Containment Leakage Rate Testing Program. STS SR 3.6.1.1 requires the visual examination and leakage rate testing be performed in accordance with 10 CFR 50 Appendix J as modified by approved exemptions. ITS SR 3.6.1.1 modifies STS SR 3.6.1.1 to conform to CTS 4.6.1.2. The STS is based on Appendix J Option A while the CTS/ITS are based on Appendix J, Option B. Changes to the STS with regards to Option A versus Option B are covered by a letter from Mr. Christopher I. Grimes to Mr. David J. Modeen, NEI dated 11/2/95 and TSTF 52. The ITS changes are not in conformance with the letter or TSTF 52 as modified by staff comments. COMMENTS: Licensee to update submittal with regards to 11/2/95 letter and updated TSTF 52 when OG provides revision or provide additional justification for deviations.	The Specification has been updated to conform to the model of TSTF 52 provided in the letter from Mr. Christopher I. Grimes to Mr. David J. Modeen, NEI dated 11/2/95.

ITEM NO	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.1-4	JFD 3	ITS B3.6.1 Bases-LCO	ITS B3.6.1 Bases-LCO adds additional statements describing Type A, Type B and Type C testing. No justification has been provided for these additional statements. COMMENTS: Provide a discussion and justification for these additional statements.	These statements provide a brief description of Type A, B and C testing and were added as clarification during the ITS review process at PVNGS. The additional text is consistent with and references 10 CFR 50 Appendix J, Option B. Clarifications of this type fall under JFD 1 for this specification. The NUREG markup will be revised and annotated accordingly.

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.2-1	A.5	CTS 3.6.1.3 ACTIONS ITS 3.6.2 ACTIONS-Note 2	ITS 3.6.2 ACTIONS is modified by several Notes. Note 2 allows separable condition entry for each air lock. There is such a requirement in CTS 3.6.1.3. However, justification A.5 states that "The wording of the LCO, 'Each containment airlock shall be OPERABLE...' implies that the CTS ACTIONS are to be applied separately to each air lock." The staff finds that the CTS LCO and ACTIONS do not imply separate condition entry. The staff also finds that the change is less restrictive not administrative. COMMENTS: Provide additional discussion and justification for this less restrictive change.	CTS LCO 3.6.2 states that *each* containment air lock shall be Operable and then goes on to specify the details of Operability for each air lock as opposed to *two* air locks. It follows then that the Actions apply to *each* air lock and not *two* air locks. It is appropriate to apply the Actions to each air lock since the air locks do not provide redundancy for each other as do the ECCS pumps, for example. They operate independent of each other as do other containment penetrations.

ITEM NO	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.2-2	L.1	CTS 3.6.1.3 ACTION a.1	CTS 3.6.1.3 ACTION a.1 states in part "...operation may then continue until performance of the next required overall air lock leakage test provided that..." This phrase has been deleted from the CTS. The justification states ITS 3.6.2 ACTION A allows continued operation for an unlimited time as long as the OPERABLE door is verified to be locked closed at least once per 31 days. The justification is unacceptable, since unlimited operation is restricted by the ITS Notes and SRs. The CTS statement is retained by implication in the ITS based on ITS 3.6.2 ACTION Note 3, SR 3.6.2.1 Note 1, and SR 3.6.2.1. Thus the change should be considered an administrative change. COMMENTS: Provide additional discussion and justification for this administrative change.	The CTS states in 3.6.1.3 ACTION a.1, "Operation may then continue until performance of the next required overall air lock leakage test provided that the OPERABLE air lock door is verified to be locked closed at least once per 31 days." The Actions required in the ITS with one air lock door inoperable are stated in Required Actions A.1, A.2 and A.3. None of these 3 Required Actions specify that restoration of the air lock door is required prior to the next required overall air lock leakage test. The notes and SRs cited do not retain this requirement. ITS 3.6.2 ACTION Note 3 requires entry into the applicable Conditions and Required Actions of LCO 3.6.1, "Containment" when leakage results in exceeding the overall containment leakage rate acceptance criteria. SR 3.6.2.1 Note 1 states that an inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test.

ITEM NO	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.2-3	JFD 2	STS B3.6.2 Bases ACTIONS ITS B3.6.2 Bases ACTIONS	The description of the Notes associated with STS 3.6.2 ACTIONS states in STS B3.6.2 ACTIONS the following: "It is preferred that the airlock be accessed from inside containment by entering through the other OPERABLE air lock. However, if this is not practicable..." These words have been deleted from the ITS B3.6.2 Bases ACTIONS and replaced with "If the inner door is inoperable,...." The justification used is the generic plant specific titles, nomenclature, etc., justification. This justification is unacceptable since the change could be considered generic. COMMENTS: Either return to the STS wording or provide additional discussion and justification for this change based on current licensing basis, system design, or operational constraints.	The PVNGS current licensing basis allows the outer air lock door to be opened for 1 hour per year to perform repairs of an inoperable inner door. The small amount of time during which the Operable door is open during entry and exit does not warrant the added radiological exposure and resources associated with transit through containment, with the plant operating at full power, from the other air lock. Since the 1 hour time limit has never been approached at PVNGS, it is acceptable to remove the time constraint. This change is discussed in DOC L.2. Good operating practice dictates that all factors affecting public, personnel and equipment safety be considered during these types of evolutions. Since the deleted statement is a preferrence and not a requirement, removal of this statement has no effect on the safe implementation of the Specification. NUREG Exception 7 is added to provide this justification.

PVNGS ITS 3.6.2 CONTAINMENT AIR LOCKS

ITEM NO	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.2-4	JFD 2	STS B3.6.2 Bases ACTIONS ITS B3.6.2 Bases ACTIONS	The description of the Notes associated with STS 3.6.2 ACTIONS states in STS B3.6.2 ACTIONS the following: "If ALARA conditions permit, entry and exit should be via an OPERABLE air lock." These words have been deleted from the ITS B3.6.2 Bases- ACTIONS. The justification used is the generic plant specific titles, nomenclature, etc., justification. This justification is unacceptable since the change could be considered generic. COMMENTS: Either return to the STS wording or provide additional discussion and justification for this change based on current licensing basis, system design, or operational constraints.	See discussion for Item No. 3.6.2-3.

PVNGS ITS 3.6.2 CONTAINMENT AIR LOCKS

ITEM NO	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.2-5	JFD 2	ITS B3.6.2 Bases - RA B.1, B.2, and B.3	ITS B3.6.2 BASES -RA B.1, B.2, and B.3 Note 1 description has been modified by the addition of the following sentences: "This Note applies if ACTIONS A, B, and C are entered concurrently. Inoperable interlocks do not cause the doors to be inoperable." The justification used is the generic plant specific titles, nomenclature, etc., justification. This justification is unacceptable. The staff considers this change to be generic. COMMENTS: Delete this generic change.	The added text provides clarification that although the function of the interlocks affects both doors, it is not necessary to enter Condition C due solely to inoperable interlocks. In order for Action B Note 1 to apply, you must be in Condition A (if both doors in the same air lock are inoperable then Condition A must be entered for one door inoperable), Condition B (by default since that is where the subject note is located), and Condition C (if both doors in the same air lock are inoperable then Action C must be entered since no other Condition is specified for two doors in the same air lock inoperable) concurrently. The added text does not change the intent or application of the specification, it only provides additional clarification for users. Additional justification is provided as NUREG Exception 8. This change was not considered generic because it was considered below the threshold needed for processing a generic change.

PVNGS ITS 3.6.2 CONTAINMENT AIR LOCKS

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.2-6	JFD 2	ITS B3.6.2 Bases - RA B.1, B.2, and B.3	ITS B3.6.2 Bases - RA B.1, B.2, and B.3 Note 2 description has been modified by the addition of the following sentences: "Required Actions B.1, B.2, and B.3 are suspended while the airlock is under administrative control as allowed by Note 2." The justification used is the generic plant specific titles, nomenclature, etc., justification. This justification and change is unacceptable. The change would allow suspension of RA B.2, B.2, and B.3 indefinitely as long as it was under administrative control. This is not the intent of the Note. The intent is to allow entry and exit only for the time necessary to open and close the doors. The change also could be considered generic. COMMENTS: Delete this change.	The intent of the additional text is to provide clarification for the users that the requirements of the Actions (closing and locking an Operable door) are suspended while entering and exiting under administrative control as allowed by Note 2. If the requirements (closing and locking an OPERABLE door) were not suspended, it would not be possible to enter containment. The added text does not allow indefinite suspension of the Required Actions as Note 2 specifies that the suspension is for entry and exit of containment. The added text does not change the intent or application of the specification, it only provides additional clarification for users. This change was not considered generic because it was considered below the threshold needed for processing a generic change.
3.6.2-7	JFD 3	ITS SR 3.6.2.1 ITS B3.6.2 Bases SR 3.6.2.1 and REFERENCES	The ITS changes are not in conformance with the letter or TSTF 52 as modified by staff comments. See Item Number 3.6.1-3 COMMENTS: See Item Number 3.6.1-3.	See response to item number 3.6.1-3.

PVNGS ITS 3.6.2 CONTAINMENT AIR LOCKS

ITEM NO	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.2.-8	JFD 4 JFD 5	STS SR 3.6.2.2 and Associated Bases ITS SR 3.6.2.2 and Associated Bases	STS SR 3.6.2.2 requires verifying only one door in the air lock will open at a time at six month intervals. The interval is modified in the ITS SR 3.6.2.2 from 6 months to 24 months. This modification is in accordance with TSTF 17; however, the Bases changes are not in accordance with TSTF 17. COMMENTS: Licensee to update submittal to be in accordance with TSTF 17 or provide additional justification for the deviations.	The Bases has been changed to conform to TSTF 17.
3.6.2-9	None	CTS 3.6.1.3.b	CTS 3.6.1.3.b is shown as being relocated to ITS 5.0. No justification is provided for this administrative change. COMMENTS: Provide discussion and justification for this administrative change.	This change is part of DOC A.1. Moving Specifications from one section to another in order to conform to the format of NUREG 1432, revision 1 is within the scope of DOC A.1.

PVNGS ITS 3.6.3 CONTAINMENT ISOLATION VALVES

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.3-1	A.2	CTS 4.6.1.1.a	CTS 4.6.1.1.a ACTION states in part, "...verifying that all penetrations* not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions... ." The asterisk refers to a note which states, "Except valves, blind flanges, and deactivated automatic valves which are located in the containment and are locked, sealed, or otherwise secured in the closed position. The ITS SRs 3.6.3.3 and 3.6.3.4 retain these CTS requirements. The DOC A.2 is in error when it characterizes CTS 4.6.1.1.a as an ACTION. CTS 4.6.1.1.a is not a surveillance of valves to comply with ACTIONS but a normal periodic inspection. Therefore, this DOC should be revised. COMMENTS: Provide additional discussion and justification to characterize this administrative change as an SR rather than an ACTION.	The reference to CTS 4.6.1.1 Action a should have been CTS 4.6.1.1.a. The DOC will be corrected to reflect the correct reference. ITS SR's 3.6.3.3 and 3.6.3.4 have been revised to incorporate NRC approved TSTF number 45.

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.3-2	A.7	CTS 3.6.3 ACTIONS ITS 3.6.3 ACTION B	ITS 3.6.3 ACTION B specifies the Required Actions and Completion Times for two containment isolation valves in the same penetration inoperable. The justification used to justify adding ITS 3.6.3 ACTION B is CTS 3.6.1.1 ACTION. While the justification may have merit and theoretically apply, the justification is incorrect. CTS 3.6.3 is the specification that should apply here. CTS 3.6.3 does not have an ACTION for two containment isolation valves inoperable. Therefore, CTS 3.0.3 would be entered. This would make the change less restrictive rather than administrative since a shutdown would not be required. COMMENTS: Provide additional discussion and justification for this less restrictive change.	PVNGS's current operating practice is to enter 3.6.3 Action 1.d for 2 containment isolation valves inoperable in the same penetration. DOC A.7 has been deleted and DOC L.9 has been added to discuss this less restrictive change.

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.3-3	LA.1	CTS 3.6.1.7 LCO a, LCO b, and ACTION b ITS SR 3.6.3.1 ITS SR 3.6.3.2	CTS 3.6.1.7 item a, item b, and ACTION b contain details of OPERABILITY of the containment purge valves. The ITS 3.6.3 retains these same requirements unchange as ITS SR 3.6.3.1 and SR 3.6.3.2. This is an administrative change and not a less restrictive relocations. COMMENTS: Provide the additional discussion and justification for this administrative CTS change.	DOC LA.1 has been deleted and DOC A.1 addresses this change since ITS SR 3.6.3.1 and SR 3.6.3.2 retain these requirements unchanged.
3.6.3-4	LA.4	CTS 4.6.3.1	CTS 4.6.3.1 requires each containment isolation valve be demonstrated OPERABLE after maintenance. The ITS does not contain any similar requirements and these work details pertaining to maintenance activities are moved to Licensee Controlled Documents. The Documents are not identified by specific name, number and location. Also, the type of the regulatory change control process is not identified for procedures. COMMENTS: Provide the procedure or plant document to which the information is moved and the applicable document change controls.	In PVNGS letter number 102-03942 to the NRC dated May 30, 1997, PVNGS has provided a matrix of the relocated requirements identified during the ITS conversion. The letter also identifies the applicable controls that will be applied once the requirement is relocated. With respect to this specific comment, the requirement LA.4 of ITS 3.6.3 is being relocated to the ITS Bases which will be controlled in accordance with the provisions of 10CFR50.59 and the Technical Specification Bases Control Program.

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.3-5	L.2	CTS 4.6.1.7.2 CTS 4.6.1.7.3 ITS SR 3.6.3.6	CTS 4.6.1.7.2 requires leakage rate testing of the 42" purge valves once per 6 months on a STAGGERED TEST BASIS. CTS 4.6.1.7.3 requires leakage rate testing of the 8" containment purge valves once per 92 days. ITS SR 3.6.3.6 requires leakage rate testing every 184 days AND within 92 days after opening the valve. The Less Restrictive change is the deletion of "STAGGERED TEST BASIS." The justification for the deletion states that the reason is to detect generic degradation of the seals by testing more often. This is wrong. The reason for "STAGGERED TEST BASIS" is to prevent testing all the same components at the same time which could cause total loss of function and/or perturbation in plant operation. The test frequency remains the same for each component in this case 6 months (CTS requirement) is not more frequent. The STS/ITS change would allow testing of all components at the same time. Thus the change is both administrative (no change in 6 month frequency) and more restrictive (addition of 92 day frequency) for the 42" purge valves. COMMENTS: Provide additional	DOC L.2 has been changed to include the revised reason for testing the containment purge valves on a STAGGERED TEST BASIS. The DOC was kept as a less restrictive change and was not changed to administrative since the requirement for testing on a STAGGERED TEST BASIS was deleted. DOC M.3 has been added to address the additional requirement for testing the 42" purge valves within 92 days after opening the valves.

PVNGS ITS 3.6.3 CONTAINMENT ISOLATION VALVES

ITEM NO	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.3-6	L.6	CTS 4.6.1.1.a ITS SR 3.6.3.4	CTS 4.6.1.1.a requires verifying at least once per 31 days that all penetrations not capable of being closed by OPERABLE containment isolation valves and required to be closed during accident conditions are closed. This requirement is modified by an asterisk which makes an exception for devices located inside containment and which are locked, sealed, or otherwise secured in position. ITS SR 3.6.3.4 contains requirements for verifying isolation of all penetrations inside containment not capable of being closed by operable automatic containment isolation valves. This is a more restrictive requirement. COMMENTS: Provide the additional discussion and technical justification for this more restrictive change.	This comment has been resolved by the incorporation of NRC approved TSTF number 45 which revises ITS SR's 3.6.3.3 and 3.6.3.4. The changes related to this are discussed in DOC's L.6 and L.7.

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.3-7	JFD 1	ITS B3.6.3 Bases - APPLICABLE SAFETY ANALYSES	ITS B3.6.3 Bases - APPLICABLE SAFETY ANALYSES adds the following statement: "The OPERABILITY of main steam safety valves, main steam isolation valves, and main steam atmospheric dump valves is covered by specifications 3.7.1, 3.7.2, 3.7.3, and 3.7.4, respectively." This statement is justified using an editorial justification, which is incorrect. Specifications 3.7.1, 3.7.2, 3.7.3 and 3.7.4 are included in the STS and ITS because these valves have more than one safety function, in addition to containment isolation. Specifications provide the required OPERABILITY requirements, Required Actions, and Surveillances for the other safety functions. ITS 3.6.3 applies to these valves only for the containment isolation safety function. Therefore the statement should be deleted. In addition, the statement would be considered as a generic change which would be beyond the scope of review for this conversion. COMMENTS: Delete the statement from ITS B3.6.3 Bases- APPLICABLE SAFETY ANALYSES.	This statement is consistent with the PVNGS current licensing basis. The Bases for CTS 3.6.3 states in part, "The OPERABILITY of main steam safety valves, main steam atmospheric dump valves, and main steam isolation valves is covered separately. The main steam safety valves have very high pressure setpoints to actuate and are covered by Specification 3/4.7.1.1. The atmospheric dump valves and the main steam isolation valves are covered by Specifications 3/4.7.1.6 and 3/4.7.1.5, respectively." TS Amendment numbers 85, 73 and 57 to PVNGS Units 1, 2 and 3, respectively, were approved by the NRC in October of 1994 which revised the CTS Bases for Specification 3/4.6.3 to state that the operability of these valves is covered separately. There is no separate Specification for the MFIVs in the CTS. A separate Specification for the MFIVs has been added to the ITS so it is reasonable and consistent to refer to the component specific Specification for Operability requirements.

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.3-8	JFD 1	ITS B3.6.3 Bases SR 3.6.3.6 and REFERENCES	See Item Number 3.6.1-3	See response to Item Number 3.6.1-3.
3.6.3-9	JFD 2	ITS B3.6.3 Bases - BACKGROUND	ITS B3.6.3 Bases- BACKGROUND adds the following statement: "Valves that serve (i.e., open) accident consequence limiting systems do not need to be considered containment isolation valves." The justification used to add this statement is the general plant specific title, nomenclature, etc., justification. The justification is incorrect and the statement is wrong. 10 CFR 50 Appendix A and GDC 54 through 57 state that all systems that penetrate containment shall have containment isolation valves. Even though a valve may remain open during an accident to perform another safety function, it is considered a containment isolation valve if it meets the criteria of GDC 54 through 57. In addition, the proposed addition is considered a generic change which would be beyond the scope of review for this conversion. COMMENTS: Delete the statement from ITS B3.6.3 Bases-BACKGROUND.	The referenced statement from the NUREG Bases has been removed.

PVNGS ITS 3.6.3 CONTAINMENT ISOLATION VALVES

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.3-10	JFD 2	ITS B3.6.3 Bases RA C.1 and C.2	ITS B3.6.3 Bases-RA C.1 and C.2 adds the following to the last sentence in the description of the Note to Condition C: "...which are neither part of the reactor coolant pressure boundary nor connected directly to the containment atmosphere (GDC 57)." The justification used is the general plant specific title, nomenclature, etc., justification. This is the incorrect justification for this generic change. COMMENTS: Delete this generic change.	This change adds clarification as to which penetrations the Action applies. Instead of merely stating that the change addresses penetration flow paths in a closed system, the change describes the applicable systems in terms of the service. The added text is consistent with the GDC. The added text does not change the intent or application of the specification, it only provides additional clarification for users. This change was not considered generic because it was considered below the threshold needed for processing a generic change.
3.6.3-11	None	CTS 4.6.3.4 CTS 4.6.3.5	CTS 4.6.3.4 and CTS 4.6.3.5 have been relocated to ITS 5.0. According to the CTS markup no justification has been provided for this administrative change. COMMENTS: Provide a discussion and justification for this administrative change.	This change is part of DOC A.1. Moving surveillances from one section to another in order to conform to the format of NUREG 1432, revision 1 is within the scope of DOC A.1. Refer to ITS 5.0 for details and discussion of any changes to the requirements.

PVNGS ITS 3.6.4 CONTAINMENT PRESSURE

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.4-1	JFD3	ITS B3.6.4 Bases - APPLICABLE SAFETY ANALYSES	ITS B3.6.4 Bases-APPLICABLE SAFETY ANALYSES states that the maximum peak internal pressure is 52.0 psig. Other ITS B3.6 Bases also state the same pressure. All justifications except for JFD 3 state the pressure as 52.0 psig. JFD 3 uses 52.8. COMMENTS: Correct this discrepancy.	JFD 3 will be revised to reflect 52.0 psig

PVNGS ITS 3.6.5 CONTAINMENT AIR TEMPERATURE

ITEM NO	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.5-1	A.2	CTS 3.6.1.5 ACTION	The CTS markup for CTS 3.6.1.5 ACTION contains a DOC A.2 for changing the containment average air temperature to 117°F from 120°F. This DOC A.2 is not provided. COMMENTS: Provide a discussion and justification for this administrative change.	This change is discussed in DOC LB.1. The CTS markup will be updated to reflect this change.

PVNGS ITS 3.6.6 CONTAINMENT SPRAY SYSTEM

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.6-1	A.2	CTS 3.6.2.1 ACTION ITS 3.6.6 Condition B	CTS 3.6.2.1 ACTION states in part, "...restore the inoperable spray system to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within 30 hours." ITS LCO 3.6.6 RA B.2 requires the unit to be placed outside of the Mode of Applicability within 84 hours. DOC A.2 provides an acceptable justification for the deletion of "Restore the inoperable spray system to operable status within the next 48 hours." However, no justification is provided for changing the CTS 30 hours to COLD SHUTDOWN to the ITS 84 hours. Even though the total completion times are equal for both ITS and CTS (84 hours), a justification is needed since the deletion takes out "within the next 48 hours." COMMENTS: Provide additional discussion and justification for this administrative change.	This change is now identified and discussed in DOC A.7.

PVNGS ITS 3.6.6 CONTAINMENT SPRAY SYSTEM

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.6-2	LA.2	CTS 4.6.2.1.a ITS SR 3.6.6.1	CTS 4.6.2.1.a contain details of the flow paths resulting from the correct alignment of valves. ITS SR 3.6.6.1 does not contain the details of the required flow paths. The functional details are relocated to the UFSAR and ITS Bases. DOC LA.2 states "These details are not required to determine the OPERABILITY of the system or components...." This statement is incorrect. The system flowpath is only operable when components are in correct alignment which is what both CTS 4.6.2.1.a and ITS SR 3.6.6.1 are verifying. COMMENTS: Provide additional discussion and justification for this less restrictive (LA) change.	ITS SR 3.6.6.1 requires verification that the valves in the flow path are in the correct alignment. The requirement to verify alignment is not relocated, only the description of the required flow path is relocated. The description of the flowpath from CTS 4.6.2.1 has been added to the ITS Bases. The Bases will be controlled in accordance with the provisions of 10CFR50.59 and the Technical Specification Bases Control Program.

PVNGS ITS 3.6.6 CONTAINMENT SPRAY SYSTEM

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.6-3	LA.3 JFD 2	CTS 4.6.1.2.e STS SR 3.6.6A.9 and Associated Bases ITS SR 3.6.6.6 and Associated Bases.	CTS 4.6.1.2.e requires testing of the spray nozzles for obstructions by blowing air or smoke through them. STS 3.6.6A.9 and ITS SR 3.6.6.6 requires testing of the spray nozzles for obstructions but does not state whether air or smoke tests are to be used. The details of air or smoke testing are now contained in the STS B3.6.6 Bases- SR 3.6.6A.9 and ITS B3.6.6 Bases SR 3.6.6.6. ITS B3.6.6 Bases -SR 3.6.6.6 also states that thermography can be used as well as other undefined tests. Thermography tests and the other undefined tests have not been approved by the staff for use in testing unobstructed flow in the Containment Spray System. Therefore, this change would be considered a generic change which would be beyond the scope of review. COMMENTS: Delete this generic change.	This statement was added as clarification that alternate methods of detecting the flow of air or smoke through the nozzles are acceptable. The CTS and ITS do not specify or restrict any types of methods of detection. The current practice at PVNGS is to test the spray nozzles by blowing heated air through them and verify the spray nozzles are unobstructed using thermography test equipment. The use of thermography is not an alternate test method, but a means of detecting that the flow of air is not obstructed. The ITS Bases has been revised to remove the incorrect statement that thermography is an alternate type of test method for the spray nozzles.

PVNGS ITS 3.6.6 CONTAINMENT SPRAY SYSTEM

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.6-4	LA.4 JFD 5	CTS 4.6.2.1.b ITS SR 3.6.6.3 and Associated Bases	CTS 4.6.2.1.b provides details of functional testing for the containment spray pumps. The CTS required details of flow rate and developed head are removed from the ITS and replaced with new text under JFD 5. The new text in ITS SR 3.6.6.3 and Associated Bases permits different test flow rates than the recirculation flow rate. The proposed change is not in accordance with TSTF 78. Inadequate justification is provided for the deviation from TSTF 78. COMMENTS: Licensee to update submittal to be in accordance with TSTF 78 or provide additional justification for the deviations based on current licensing Basis, system design or operational constraints.	The specification has been changed in accordance with TSTF 78.

PVNGS ITS 3.6.6 CONTAINMENT SPRAY SYSTEM

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.6-5	JFD 2	STS B3.6.3 Bases - RA A.1 ITS B3.6.3 Bases RA A.1	STS B3.6.3 Bases-RA A.1 states that the 72 hour Completion Time for RA A.1 is based in part on "The redundant heat removal capability afforded by the Containment Spray System." ITS B3.6.3 Basis -RA A.1 deletes this basis for the 72 hour Completion Time. The justification provided is the general plant specific titles, nomenclature, etc., justification. Since the BACKGROUND section for this Bases confirms that this statement is true for the system design, the justification is considered inadequate. COMMENTS: Provide additional discussion and justification for this deletion.	This change will be removed so that the ITS B3.6.6 Bases for Required Action A.1 agrees with the NUREG for this sentence.

PVNGS ITS 3.6.7 HYDROGEN RECOMBINERS

ITEM NO	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.7-1	A.2 A.3 LA.2 L.1 L.2 JFD 3 JFD 5	CTS 3.6.4.2 CTS 3.6.4.2 ACTIONS CTS 3.6.4.3 CTS 3.6.4.3 ACTIONS ITS LCO 3.6.7 ITS 3.6.7 ACTIONS and Associated Bases	CTS 3.6.4.2, CTS 3.6.4.2 ACTIONS, CTS 3.6.4.3, and CTS 3.6.4.3 ACTIONS specify the OPERABILITY requirements and remedial actions to be taken for the hydrogen recombiners and Hydrogen Purge Cleanup System. ITS 3.6.7 combines the two CTS into one specification. ITS LCO 3.6.7 and ITS 3.6.7 ACTIONS do not reflect the CTS requirements nor is there appropriate justification for changing the CTS requirements when converting to the ITS. See Item Numbers 3.6.7-2, 3.6.7-3, 3.6.7-5, 3.6.7-6, 3.6.7-7, 3.6.7-8, 3.6.7-10, 3.6.7-13, 3.6.7-14, 3.6.7-15, 3.6.7-16, 3.6.7-17 and 3.6.7-18 for additional comments on this item. COMMENTS: Modify ITS LCO 3.6.8 and ITS 3.6.8 ACTIONS and associated Bases to conform to the CTS requirements and provide additional justification and discussion for these changes. See Item Numbers 3.6.7-2, 3.6.7-3, 3.6.7-5, 3.6.7-6, 3.6.7-7, 3.6.7-8, 3.6.7-10, 3.6.7-12, 3.6.7-14, 3.6.7-15, 3.6.7-16, 3.6.7-17 and 3.6.7-18.	The ITS Hydrogen Recombiner System Specification has been revised to require an inoperable hydrogen recombiner to be restored to operable status within 30 days. This change results in CTS 3/4.6.4.3 (Hydrogen Purge Cleanup System) being relocated to the Technical Requirements Manual (TRM). The TRM will be controlled in accordance with the provisions of 10 CFR 50.59. This more restrictive change (restoration of Operability within 30 days) is consistent with NUREG-1432. DOC M.1 has been added to address the more restrictive change. DOC LA.2 has been revised to identify the relocation of the hydrogen purge cleanup system requirements.

PVNGS ITS 3.6.7 HYDROGEN RECOMBINERS

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.7-2	A.2 JFD 5	CTS 3.6.4.2 ACTION STS 3.6.8 RA A.1 ITS 3.6.8 RA A.1 and Associated Bases	CTS 3.6.4.2 ACTION states in part, "With one hydrogen recombiner system inoperable, restore the inoperable system to OPERABLE status within 30 days or meet the requirements of Specification 3.6.4.3... ." STS 3.6.8 RA A.1 requires the restoration of OPERABILITY. ITS 3.6.7 RA A.1 deletes the option of restoring OPERABILITY. The staff believes the option to restore OPERABILITY needs to be included in ITS 3.6.8 RA A.1. The Basis for this is the interpretation of CTS 3.6.4.2 and CTS 3.6.4.3 APPLICABILITY. CTS 3.6.4.3 APPLICABILITY would require the Hydrogen Purge Cleanup System be OPERABLE immediately after a hydrogen recombiner is declared inoperable. Thus the "or" in CTS 3.6.4.2 ACTION probably should have been an "and". The staff believes that ITS 3.6.8 RA A.1 should be the same as STS 3.6.8 RA A.1 and a separate condition be added to address the action to be taken if the OPERABILITY cannot be restored, to avoid the confusion associated with the CTS. See Item Numbers 3.6.7-1, 3.6.7-9, 3.6.7-14 and 3.6.7-15. COMMENTS: Return ITS 3.6.7 RA A.1 to the	See response to Item 3.6.7-1.

PVNGS ITS 3.6.7 HYDROGEN RECOMBINERS

ITEM NO	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.7-3	A.3	CTS 3.6.4.3 APPLICABIL-ITY CTS 3.6.4.3 ACTIONS ITS 3.6.7 RA B.1 ITS 3.6.7 RA C.1	CTS 3.6.4.3 ACTIONS provides directions for a condition of the Hydrogen Purge Cleanup System inoperable and one hydrogen recombiner OPERABLE. CTS footnote (*) states the Specification is applicable in MODES 1 and 2 with less than two hydrogen recombiners OPERABLE. The CTS markup changes one hydrogen recombiner OPERABLE to inoperable. The justification is confusing and incorrect. It states that there could be a condition with no hydrogen recombiners OPERABLE and the LCO and ACTIONS would still be met. This is not true. With no Hydrogen Recombiners OPERABLE CTS 3.0.3 would be entered. In addition, the justification refers RA B.1 (Be in MODE 3). This should be ITS 3.6.7 RA C.1. See Item Numbers 3.6.7-1, 3.6.7-10 and 3.6.7-18. COMMENTS: Provide additional discussion and justification for this change. See Item Numbers 3.6.7-1, 3.6.7-10 and 3.6.7-18.	See NRC comment 3.6.7-1

PVNGS ITS 3.6.7 HYDROGEN RECOMBINERS

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.7-4	LA.1	CTS 4.6.4.3.b CTS 4.6.4.3.c CTS 4.6.4.3.d CTS 4.6.4.3.e CTS 4.6.4.3.f	CTS 4.6.4.3.b, CTS 4.6.4.3.c, CTS 4.6.4.3.d, CTS 4.6.4.3.e, and CTS 4.6.4.3.f provide all the surveillance testing requirements for the HEPA filter and charcoal absorber housing. The ITS moves these testing requirements to the ITS Section 5.5.11, Ventilation Filter Test Program. LA.1 discusses moving these surveillance details to licensing controlled plant procedures; whereas, these details are moved to a program contained in the ITS 5.0. This change is an administrative change. In addition, no markups are provided for CTS 4.6.4.3.b.3 through CTS 4.6.4.3.f. COMMENTS: Provide additional discussion and justification for this administrative change and appropriate markups for CTS 4.6.4.3.b.3 through CTS 4.6.4.3.f.	See response to Item 3.6.7-1. In addition, DOC LA.1 has also been revised to indicate that the relocated requirements from SR 4.6.4.2 have been relocated to the ITS Bases. The ITS Bases will be controlled in accordance with the provisions of the ITS Bases Control Program and 10 CFR 50.59. DOC LA.2 has been revised to address the relocated requirements of the hydrogen purge cleanup system.

PVNGS ITS 3.6.7 HYDROGEN RECOMBINERS

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.7-5	LA.2	CTS 3.6.4.3 ACTION	CTS 3.6.4.3 ACTION allows 30 days to restore an inoperable hydrogen Purge Cleanup System to OPERABLE status. The justification states that the system is no longer a TS system, therefore there is no OPERABILITY associated with it; thus ITS 3.6.7 deletes the OPERABILITY of this system. However, the split report states that the specification is retained. In addition, the definition of OPERABLE/OPERABILITY and the SRs associated with ITS 3.6.7 require this system to be OPERABLE. Therefore, this justification is wrong. See Item Numbers 3.6.7-1, 3.6.7-6, 3.6.7-7, 3.6.7-8, 3.6.7-10, 3.6.7-12, 3.6.7-14, 3.6.7-15, 3.6.7-16, and 3.6.7-18. COMMENTS: Delete this change and justification. See Item Numbers 3.6.7-1, 3.6.7-6, 3.6.7-7, 3.6.7-8, 3.6.7-10, 3.6.7-12, 3.6.7-14, 3.6.7-15, 3.6.7-16, and 3.6.7-18.	See response to Item 3.6.7-1.

PVNGS ITS 3.6.7 HYDROGEN RECOMBINERS

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.7-6	L.1	CTS 3.6.4.2 CTS 3.6.4.3 ITS 3.6.7 Condition B and Associated Bases	The resolution of item numbers 3.6.7-1, 3.6.7-5, 3.6.7-7, 3.6.7-8, 3.6.7-10, 3.6.7-12, and 3.6.7-16 will impact DOC L1. COMMENTS: See Item Numbers 3.6.7-1, 3.6.7-5, 3.6.7-7, 3.6.7-8, 3.6.7-10, 3.6.7-12, and 3.6.7-16.	There is no impact to DOC L.1. This DOC discusses the difference between PVNGS' current position of entering 3.0.3 with two recombiners inoperable and the ITS requirement of allowing seven days to restore Operability of one recombiner prior to commencing a shutdown. There are no proposed changes to ITS 3.6.7 Action B therefore the DOC is still applicable.

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.7-7	L.2 JFD 3 JFD 4 JFD 5	CTS 3/4.6.4.3 ITS LCO 3.6.7 ITS 3.6.7 RA A.1 ITS 3.6.7 RA B.1 and B.2 ITS 3.6.7 RA C.1 ITS SR 3.6.7.3 ITS SR 3.6.7.4 ITS SR 3.6.7.5 and Associated Bases.	CTS 3.6.4.3 requires the Hydrogen Purge Cleanup System to be OPERABLE in the Applicable Modes anytime one or more hydrogen recombiner(s) is inoperable. The ITS LCO 3.6.7 does not contain the OPERABILITY requirements of CTS 3.6.4.3. Contrary to the Split Report which retains CTS 3/4.6.4.3, L.2 states "There is no LCO associated with the Hydrogen Purge Cleanup System.... Because there is no LCO associated with the Hydrogen Purge System, the term OPERABILITY has been changed to functional capa-bility." The staff does not recognize the term "functional capability". A system or support system is either considered OPERABLE or inoperable based on the OPERABLE/OPERABILITY definition. In addition CTS 4.6.4.3.a and CTS 4.6.4.3.b are included either totally or in part in ITS SR 3.6.7.4 and SR 3.6.7.5 respectively. These Hydrogen Purge Cleanup System surveillances are performed on a periodic bases to determine system OPERABILITY. Also, the testing requirements for the Hydrogen Purge Cleanup System filter trains are included in the Ventilation Filter Testing Program (ITS 5.5.11).	See response to Item 3.6.7-1.

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.7-7 (Cont'd)			COMMENTS: Modify ITS 3.6.7 LCO, ACTIONS, SRs, and Associated Bases to include the OPERABLE/OPERABILITY requirements of CTS 3.6.4.3 and provide additional discussions and justifications for these changes. See Item Numbers 3.6.7-1, 3.6.7-5 3.6.7-6, 3.6.7-8, 3.6.7-10, 3.6.7-12, 3.6.7-14, 3.6.7-15, 3.6.7-16, and 3.6.7-18.	
3.6.7-8	L.3	ITS 3.6.7 Required Actions	ITS 3.6.7 RA A.1 is modified by a Note which states LCO 3.0.4 is not applicable. ITS 3.6.7 is under extensive revision such that the contents of the Conditions are not known at this time which prevents an evaluation of potentially how many Conditions may or may not have this Note. See Item Numbers 3.6.7-1, 3.6.7-5, 3.6.7-6, 3.6.7-7, 3.6.7-10, 3.6.7-14 and 3.6.7-15. COMMENTS: See Item Numbers 3.6.7-1, 3.6.7-5, 3.6.7-6, 3.6.7-7, 3.6.7-10, 3.6.7-14 and 3.6.7-15.	See response to Item 3.6.7-1.

PVNGS ITS 3.6.7 HYDROGEN RECOMBINERS

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.7-9	JFD 2	ITS B3.6.7 Bases - BACKGROUND	ITS B3.6.7 Bases-BACKGROUND includes an incomplete sentence in the second paragraph. The sentence marked JFD 2 is "Control Room alarm status is" and replaces the STS sentence "The recombiners have no moving parts." The typed version of the ITS Bases does not show this incomplete sentence. COMMENTS: Correct this discrepancy and provide additional discussion and justification for this change.	The Bases markup has been revised to delete the incomplete sentence.

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.7-10	JFD 2	ITS B3.6.7 Bases - BACKGROUND	ITS B3.6.7 Bases-BACKGROUND adds the following sentence to the end of the second paragraph: "Portions of the Hydrogen Control System which are unit specific do not affect other unit LCOs. This implies that portions of the system are shared by all three units. If this is true then appropriate changes to ITS 3.6.7 ACTIONS and Associated Bases and ITS B3.6.7 Bases-LCO need to be made to delineate those portions associated with each unit and all 3 units as well as the remedial actions on a unit and plant specific basis to be taken when they become inoperable. See Item Numbers 3.6.7-1, 3.6.7-2, 3.6.7-3, 3.6.7-5, 3.6.7-6, 3.6.7-7, 3.6.7-8, 3.6.7-12, 3.6.7-14, 3.6.7-15 and 3.6.7-16. COMMENTS: Revise ITS 3.6.7 ACTIONS and ITS B3.6.7 Bases to reflect the system design and provide additional discussion and justification for these changes. See Item Numbers 3.6.7-1, 3.6.7-2, 3.6.7-3, 3.6.7-5, 3.6.7-6, 3.6.7-7, 3.6.7-8, 3.6.7-12, 3.6.7-14, 3.6.7-15 and 3.6.7-16.	The recombiners are skid mounted and are shared among the three units as stated in the ITS LCO, ITS Bases and CTS LCO. The Required Actions are the same for a specific unit except that portions of the Hydrogen Control System which are unit specific do not affect other unit LCOs as stated in the Bases. The specifics of what attendant equipment (piping, valves etc) is clarified using plant specific drawings and procedures and is not required to be specified in the Bases. The definition of Operability and the SFDP assures that the proper Actions are taken.

PVNGS ITS 3.6.7 HYDROGEN RECOMBINERS

ITEM NO	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.7-11	JFD 3 JFD 4 JFD 5	ITS B.3.6.7 Bases SR 3.6.7.3, ITS B3.6.7, Bases SR 3.6.7.4 AND SR 3.6.7.5	ITS B3.6.7 Bases SR3.6.7.3 and ITS B3.6.7 Bases- SR 3.6.7.4 AND SR 3.6.7.5 refer to NUREG-1432 to justify changes in frequencies and surveillances. This is unacceptable. The Bases discussions are to provide a description and justification for the SRs based on standard designs or plant specific designs, not the NUREGs. COMMENTS: Delete the references to NUREG-1432 and provide additional justification and discussion based on current licensing basis, system design or operational constraints.	The added statements are not justifying the change, they are providing the basis for the deviation from NUREG-1432. The frequency for SR 3.6.7.1, SR 3.6.7.2 and SR 3.6.7.3 are not being changed from the current requirements, but are consistent with the PVNGS CTS.

PVNGS ITS 3.6.7 HYDROGEN RECOMBINERS

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.7-12	JFD 3 JFD 4 JFD 5	ITS B3.6.7 Bases- SR 3.6.7.4 AND SR 3.6.7.5	ITS B3.6.7 Bases- SR 3.6.7.4 AND SR 3.6.7.5 has included the following statement: "This SR is only required to be performed when in Condition A (one hydrogen recombiner inoperable)." This item should be characterized as a Note in these surveillances and should also apply to Condition B as well. It also is contradicted by statements in ITS B3.6.7 Bases RA B.1 and B.2 (See Item Number 3.6.7-16). See Item Number 3.6.7-1, 3.6.7-5, 3.6.7-6, 3.6.7-7, 3.6.7-10, and 3.6.7-16. COMMENTS: Provide additional discussion and justification for this statement. See Item Numbers 3.6.7-1, 3.6.7-5, 3.6.7-6, 3.6.7-7, 3.6.7-10 and 3.6.7-16.	See response to Item 3.6.7-1.
3.6.7-13	JFD4	ITS SR 3.6.7.4 and SR 3.6.7.5 and Associated Bases	The new ITS SR 3.6.7.4 and SR 3.6.7.5 are justified with JFD 4. The discussion and justification for JFD 4 does not address the addition of these two SRs. Thus, there is no technical justification for these SRs. COMMENTS: Provide additional discussion and justification for these additions.	See response to Item 3.6.7-1.

PVNGS ITS 3.6.7 HYDROGEN RECOMBINERS

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.7-14	JFD 4 JFD 5	ITS B3.6.7 Bases - RA A.1	ITS B3.6.7 Bases - RA A.1 has added the following statement: "The 30 day Completion Time allows a reasonable period of time to perform the surveillance required to establish functional capability of the Hydrogen Purge Cleanup System." This statement contradicts ITS SR 3.6.7.4 and SR 3.6.7.5 as well as CTS 3.6.4.2 and 3.6.4.3. See Item Numbers 3.6.7-1, 3.6.7-2, 3.6.7-5, 3.6.7-7, 3.6.7-8, 3.6.7-10 and 3.6.7-12. COMMENTS: Provide additional discussion and justification for this change. See Item Numbers 3.6.7-1, 3.6.7-2, 3.6.7-5, 3.6.7-7, 3.6.7-8, 3.6.7-10 and 3.6.7-12.	See response to Item 3.6.7-1.

PVNGS ITS 3.6.7 HYDROGEN RECOMBINERS

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.7-15	JFD 4 JFD 5	ITS B3.6.7 Bases RA A.1	ITS B3.6.7-Bases-RA A.1 has added the following statement: "It is reasonable to allow operation with one hydrogen recombiner inoperable for an indefinite period of time." This statement may not be entirely correct and a proper interpretation of CTS 3.6.4.2 and 3.6.4.3, based on the discussion in Item Number 3.6.7-2. See Item Numbers 3.6.7-1, 3.6.7-5, 3.6.7-7, 3.6.7-8, 3.6.7-10 and 3.6.7-14. COMMENTS: Provide additional discussion and justification based on current licensing basis system design, or operational constraints. See Item Numbers 3.6.7-1, 3.6.7-2, 3.6.7-5, 3.6.7-7, 3.6.7-8, 3.6.7-10 and 3.6.7-14.	See response to Item 3.6.7-1.

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.7-16	JFD 4 JFD 5	ITS B3.6.7 Bases - RA B.1 and B.2 ITS B3.6.7 Bases SR 3.6.7.4 and SR 3.6.7.5	ITS B3.6.7 Bases - RA B.1 and B.2 has the following sentences: "Both the initial verification and all subsequent verifications may be performed as an administrative check, by examining logs or other information to determine the availability of the Hydrogen Purge Cleanup System. It does not mean to perform the surveillances needed to demonstrate the functional capability of the Hydrogen Purge Cleanup System." These statements contradict the statements made in ITS B3.6.7 Bases SR 3.6.7.4 and SR 3.6.7.5 on when these SRs are to be performed (See Item Number 3.6.7-12) and the whole bases for ITS 3.6.7. See Item Number 3.6.7-1, 3.6.7-5, 3.6.7-6, 3.6.7-7 and 3.6.7-10. COMMENTS: Provide additional discussion and justification for these statements. See Item Numbers 3.6.7-1, 3.6.7-5, 3.6.7-6, 3.6.7-7, 3.6.7-10 and 3.6.7-12.	See response to Item 3.6.7-1.

ITEM NO	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.7-17	None	CTS 3.6.4.3 ACTION - * Footnote	CTS 3.6.4.3 ACTION and footnote (*) could result in all systems inoperable. As a part of the review of the ITS issues, the Condition when both hydrogen recombiners are inoperable and the Hydrogen Purge Cleanup System is inoperable should be discussed and appropriate actions taken. See Item Numbers 3.6.7-1, and 3.6.7-18. COMMENTS: Provide the appropriate RAs, Completion Times, discussion and justification for this condition. See Item Numbers 3.6.7-1 and 3.6.7-18.	This Condition is identified in DOC L.1. By eliminating the additional Applicability statement associated with CTS 3/4.6.4.3, this possibility no longer exists in the ITS. ITS 3.6.7 deals only with the Operability of the recombiners and requires that a shutdown be initiated after 7 days with two recombiners inoperable. Although the CTS would seem to allow Operation for 30 days with both recombiners inoperable and the hydrogen purge inoperable, it has been PVNGS' position not to place complete reliance on hydrogen purge. Therefore with no recombiners Operable, PVNGS' policy is to enter 3.0.3 whether or not hydrogen purge is available.

PVNGS ITS 3.6.7 HYDROGEN RECOMBINERS

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.7-18	None	CTS 3.6.4.3 ACTIONS	CTS 3.6.4.3 ACTION states the remedial actions to take with the Hydrogen Purge Cleanup System inoperable with one Hydrogen Recombiner inoperable. This condition is not addressed in the ITS. See Item Numbers 3.6.7-1, 3.6.7-3, 3.6.7-5, 3.6.7-7 and 3.6.7-17. COMMENTS: Provide the appropriate RAs, Completion Times, discussion, and justification for this condition. See Item Numbers 3.6.7-1, 3.6.7-3, 3.6.7-5, 3.6.7-7 and 3.6.7-17.	See response to Item 3.6.7-1.

PVNGS ITS 3.6.7 HYDROGEN RECOMBINERS

ITEM NO.	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6.7-19	None	CTS 3.6.4.3	CTS 3.6.4.3 states that the containment hydrogen purge cleanup system shall be operable and "capable of being powered from a minimum of one emergency bus". It is the STS presentation preference to move these operability details to the Bases BACKGROUND or LCO. There is no "LA" DOC for this change. Because the ITS denies the need for this system to be OPERABLE in spite of the contents of the Split Report, whether the TS is retained in accordance with the split report or relocated, a new DOC is required for this change. COMMENTS: Provide a discussion and justification for this change.	DOC LA.2 has been generated to identify this change.
3.6.7-20	None	ITS SR 3.6.7.1 ITS SR 3.6.7.2 ITS SR 3.6.7.3 ITS SR 3.6.7.4 ITS SR 3.6.7.5 and Associated Bases.	The number of the ITS SRs should be changed after the surveillance frequencies are finalized. They are to be in order of shortest first and longest last. COMMENTS: Provide the requested change.	SRs for the Hydrogen Purge System will be relocated to the Technical Requirements Manual. The remaining Surveillances have been placed in the order of shortest frequency to longest frequency.

PVNGS ITS 3.6.7 HYDROGEN RECOMBINERS

PVNGS CTS 3/4.6.4.1 HYDROGEN MONITORING INSTRUMENTATION

ITEM NO	DOC/ JFD	CTS/STS LCO	DESCRIPTION OF ISSUE	PVNGS RESPONSES
3.6R-1	None	CTS 3/4.6.4.1 ITS 3.3.10	CTS 3/4.6.4.1 specifies the requirements for the hydrogen monitoring instrumentation. In the Split Report, the retained criterion for the post-accident hydrogen monitoring instrumentation is stated as Criterion 2; however, its function is performed after the DBA, rather than as an initial condition to a DBA. ITS 3.3.10 "Post Accident Monitoring Instrumentation" is where these requirement are moved. CTS 3.3.3.6 "Post Accident Monitoring Instrumentation" was retained per the Split Report and the ITS B3.3.10 Bases-APPLICABLE SAFETY ANALYSES per Criterion 3. COMMENTS: Correct this discrepancy.	Criteria 3 is appropriate for retaining the hydrogen monitoring instrumentation.

ENCLOSURE 2

ITS Section 3.6, “Containment Systems”

PVNGS

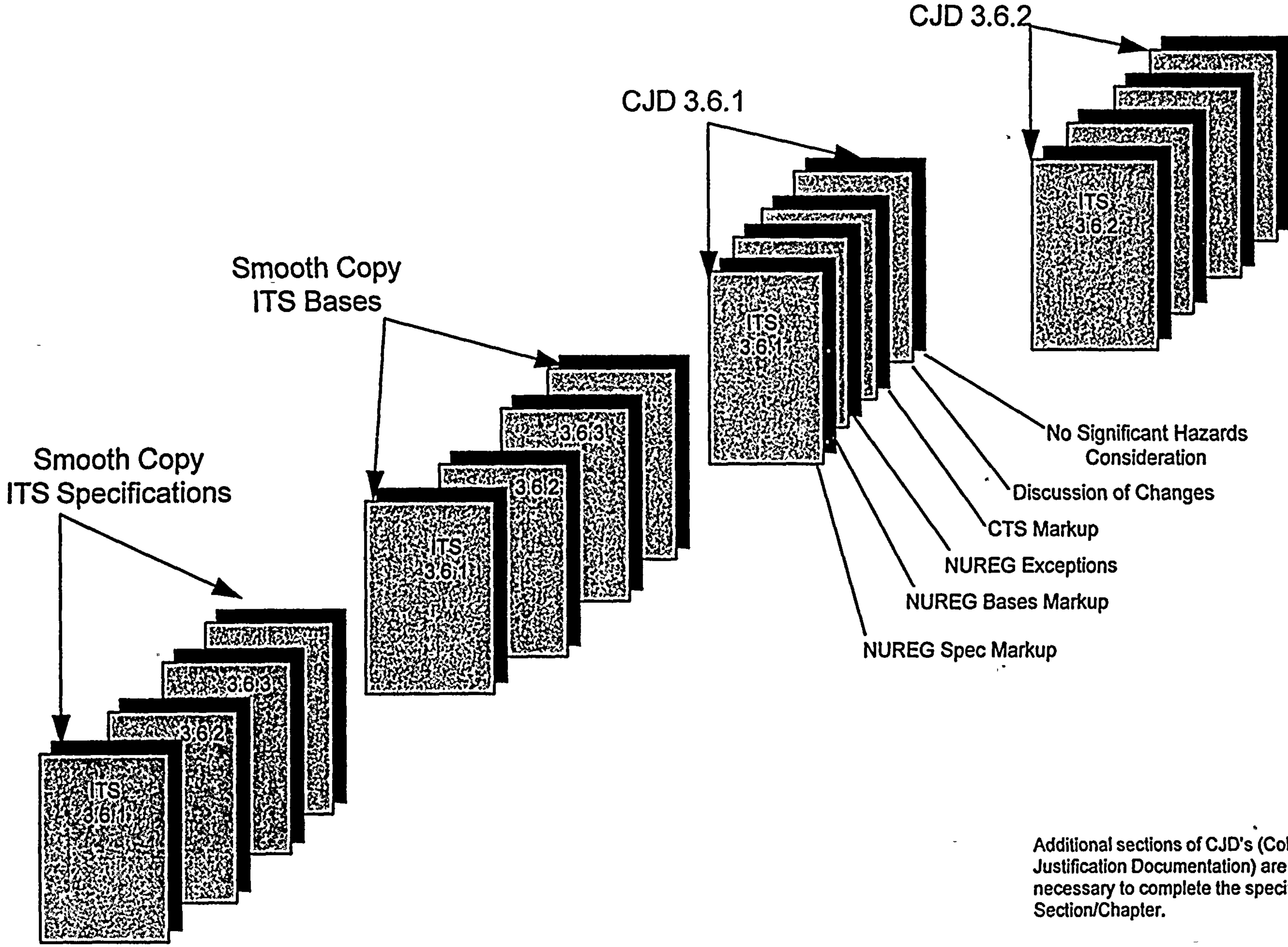
Palo Verde Nuclear Generating Station
Units 1, 2, and 3

Improved Technical Specifications

PALO VERDE

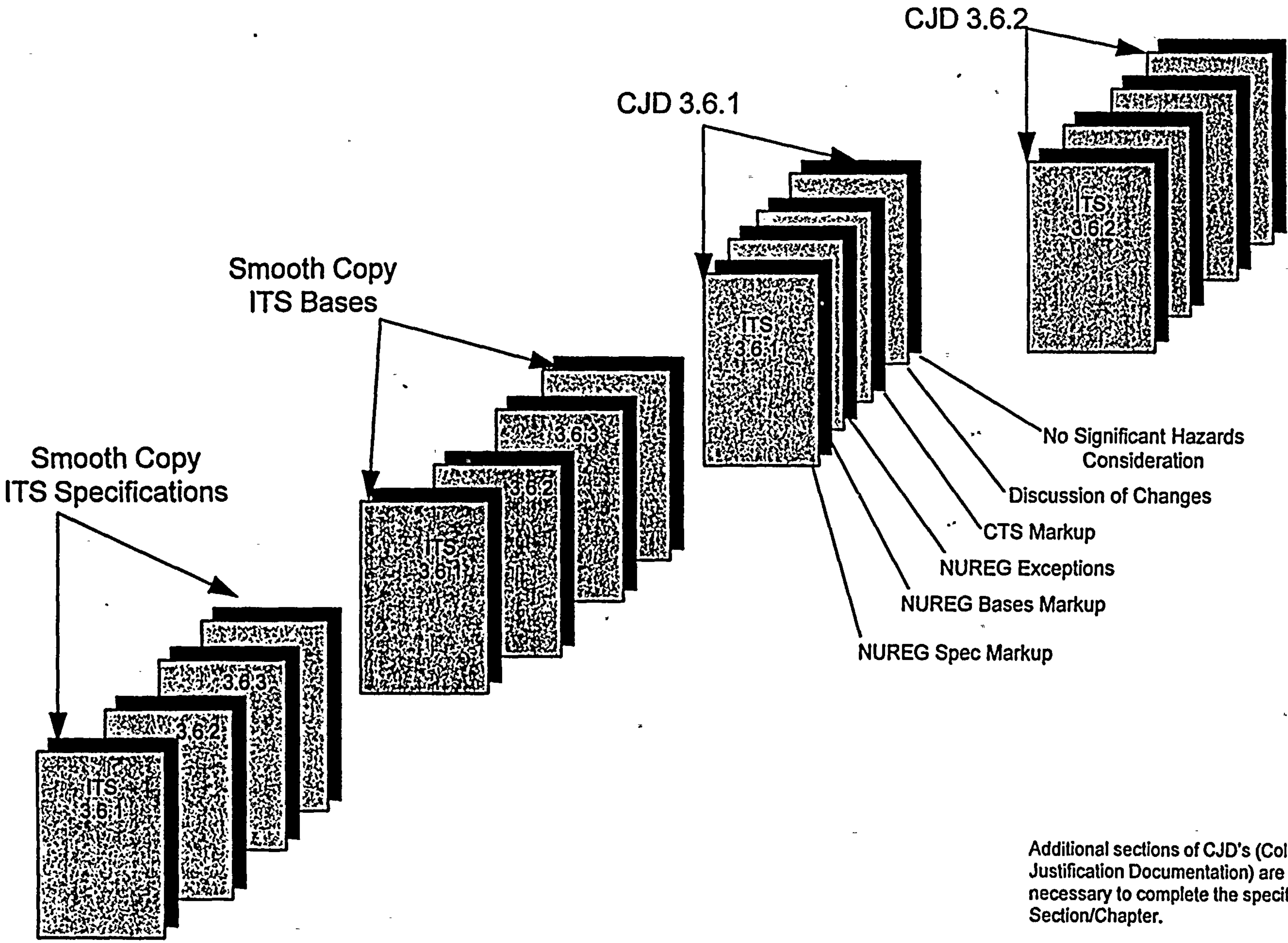
PVNGS ITS
SECTION 3.6 - CONTAINMENT SYSTEMS

ITS REVIEW PACKAGE CONTENTS
(Volume 13)



Additional sections of CJD's (Collection of Justification Documentation) are added as necessary to complete the specific ITS Section/Chapter.

ITS REVIEW PACKAGE CONTENTS
(Volume 13)



Additional sections of CJD's (Collection of Justification Documentation) are added as necessary to complete the specific ITS Section/Chapter.

SMOOTH COPY
ITS SECTION 3.6

3.6 CONTAINMENT SYSTEMS

3.6.1 Containment

LCO 3.6.1 Containment shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment inoperable.	A.1 Restore containment to OPERABLE status.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	AND	
	B.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.1	Perform required visual examinations and leakage rate testing except for containment air lock testing, in accordance with the Containment Leakage Rate Testing Program.	In accordance with the Containment Leakage Rate Testing Program
SR 3.6.1.2	Verify containment structural integrity in accordance with the Containment Tendon Surveillance Program.	In accordance with the Containment Tendon Surveillance Program

3.6 CONTAINMENT SYSTEMS

3.6.2 Containment Air Locks

LCO 3.6.2 Two containment air locks shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

------------------------------------NOTES------------------------------------

1. Entry and exit is permissible to perform repairs on the affected air lock components.
2. Separate Condition entry is allowed for each air lock.
3. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when leakage results in exceeding the overall containment leakage rate acceptance criteria.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more containment air locks with one containment air lock door inoperable.	------------NOTES------------ 1. Required Actions A.1, A.2, and A.3 are not applicable if both doors in the same air lock are inoperable and Condition C is entered. 2. Entry and exit is permissible for 7 days under administrative controls if both air locks are inoperable. ---------------------------	(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.1	Verify the OPERABLE door is closed in the affected air lock.	1 hour
	<u>AND</u>		
	A.2	Lock the OPERABLE door closed in the affected air lock.	24 hours
	<u>AND</u>		
	A.3	--------NOTE--------- Air lock doors in high radiation areas may be verified locked closed by administrative means. --------------------	
		Verify the OPERABLE door is locked closed in the affected air lock.	Once per 31 days
B. One or more containment air locks with containment air lock interlock mechanism inoperable.	------------NOTES------------ 1. Required Actions B.1, B.2, and B.3 are not applicable if both doors in the same air lock are inoperable and Condition C is entered. 2. Entry and exit of containment is permissible under the control of a dedicated individual. ----------------------------		(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. (continued)	B.1	Verify an OPERABLE door is closed in the affected air lock.	1 hour
	<u>AND</u>		
	B.2	Lock an OPERABLE door closed in the affected air lock.	24 hours
	<u>AND</u>		
	B.3	--------NOTE--------- Air lock doors in high radiation areas may be verified locked closed by administrative means. ---------------------	
		Verify an OPERABLE door is locked closed in the affected air lock.	Once per 31 days
C. One or more containment air locks inoperable for reasons other than Condition A or B.	C.1	Initiate action to evaluate overall containment leakage rate per LCO 3.6.1.	Immediately
	<u>AND</u>		
	C.2	Verify a door is closed in the affected air lock.	1 hour
	<u>AND</u>		
	C.3	Restore air lock to OPERABLE status.	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.1	-------------------NOTES------------------- 1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. 2. Results shall be evaluated against acceptance criteria applicable to SR 3.6.1.1. --- Perform required air lock leakage rate testing in accordance with the Containment Leakage Rate Testing Program.	In accordance with the Containment Leakage Rate Testing Program AND Following each closing as specified
SR 3.6.2.2	Verify only one door in the air lock can be opened at a time.	24 months

3.6 CONTAINMENT SYSTEMS

3.6.3 Containment Isolation Valves

LCO 3.6.3 Each containment isolation valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

-------------------------------------NOTES-------------------------------------

1. Penetration flow paths except for 42 inch purge valve penetration flow paths may be unisolated intermittently under administrative controls.
2. Separate Condition entry is allowed for each penetration flow path.
3. Enter applicable Conditions and Required Actions for system(s) made inoperable by containment isolation valves.
4. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when leakage results in exceeding the overall containment leakage rate acceptance criteria.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. ---------NOTE--------- Only applicable to penetration flow paths with two containment isolation valves. --------------------- One or more penetration flow paths with one containment isolation valve inoperable except for purge valve leakage not within limit.	A.1	Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.	4 hours
	AND		
			(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2	--------NOTE--------- Isolation devices in high radiation areas may be verified by use of administrative means. --------------------- Verify the affected penetration flow path is isolated.	Once per 31 days for isolation devices outside containment AND Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment
B. ---------NOTE--------- Only applicable to penetration flow paths with two containment isolation valves. --------------------- One or more penetration flow paths with two containment isolation valves inoperable except for purge valve leakage not within limit.	B.1	Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. ---------NOTE--------- Only applicable to penetration flow paths with only one containment isolation valve and a closed system. --------------------- One or more penetration flow paths with one containment isolation valve inoperable.	C.1	Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	4 hours
	AND		
	C.2	--------NOTE--------- Isolation devices in high radiation areas may be verified by use of administrative means. -------------------- Verify the affected penetration flow path is isolated.	Once per 31 days
D. One or more penetration flow paths with one or more containment purge valves not within purge valve leakage limits.	D.1	Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve with resilient seals, or blind flange.	24 hours
	AND		
			(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. (continued)	D.2	--------NOTE--------- Isolation devices in high radiation areas may be verified by use of administrative means. ---------------------	
		Verify the affected penetration flow path is isolated.	Once per 31 days for isolation devices outside containment <u>AND</u> Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment
	<u>AND</u>		
	D.3	Perform SR 3.6.3.6 for the resilient seal purge valves closed to comply with Required Action D.1.	Once per 92 days
E. Required Action and associated Completion Time not met.	E.1	Be in MODE 3.	6 hours
	<u>AND</u>		
	E.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.6.3.1	Verify each 42 inch purge valve is sealed closed except for one purge valve in a penetration flow path while in Condition D of this LCO.	31 days
SR 3.6.3.2	Verify each 8 inch purge valve is closed except when the 8 inch purge valves are open for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open.	31 days
SR 3.6.3.3	-------------------NOTE------------------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. -- Verify each containment isolation manual valve and blind flange that is located outside containment and not locked, sealed or otherwise secured and is required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	31 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.4	-------------------NOTE------------------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. -- Verify each containment isolation manual valve and blind flange that is located inside containment and not locked, sealed or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days
SR 3.6.3.5	Verify the isolation time of each automatic power operated containment isolation valve is within limits.	In accordance with the Inservice Testing Program
SR 3.6.3.6	Perform leakage rate testing for containment purge valves with resilient seals.	184 days <u>AND</u> Within 92 days after opening the valve
SR 3.6.3.7	Verify each automatic containment isolation valve that is not locked, sealed, or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	18 months

3.6 CONTAINMENT SYSTEMS

3.6.4 Containment Pressure

LCO 3.6.4 Containment pressure shall be ≥ -0.3 psig and ≤ +2.5 psig.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment pressure not within limits.	A.1 Restore containment pressure to within limits.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.4.1 Verify containment pressure is within limits.	12 hours

3.6 CONTAINMENT SYSTEMS

3.6.5 Containment Air Temperature

LCO 3.6.5 Containment average air temperature shall be ≤ 117°F.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment average air temperature not within limit.	A.1 Restore containment average air temperature to within limit.	8 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.5.1 Verify containment average air temperature is within limit.	24 hours

3.6 CONTAINMENT SYSTEMS

3.6.6 Containment Spray System

LCO 3.6.6 Two containment spray trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.
MODE 4 when RCS pressure is ≥ 385 psia

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One containment spray train inoperable.	A.1 Restore containment spray train to OPERABLE status.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 4 with RCS pressure < 385 psia.	6 hours 84 hours
C. Two containment spray trains inoperable.	C.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6.1	Verify each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	31 days
SR 3.6.6.2	Verify the containment spray piping is full of water to the 113 ft level in the containment spray header.	31 days
SR 3.6.6.3	Verify each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.6.6.4	Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	18 months
SR 3.6.6.5	Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	18 months
SR 3.6.6.6	Verify each spray nozzle is unobstructed.	10 years

3.6 CONTAINMENT SYSTEMS

3.6.7 Hydrogen Recombiners

LCO 3.6.7 Two hydrogen recombiners shared among the three units shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One hydrogen recombiner inoperable.	------------NOTE-------- LCO 3.0.4 is not applicable. ------------------------		
	A.1	Restore hydrogen recombiner to OPERABLE status.	30 days
B. Two hydrogen recombiners inoperable.	B.1	Verify by administrative means that the hydrogen control function is maintained.	1 hour AND Every 12 hours thereafter
	AND		
	B.2	Restore one hydrogen recombiner to OPERABLE status.	7 days
C. Required Action and associated Completion Time not met.	C.1	Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.7.1	Visually examine each hydrogen recombiner enclosure and verify there is no evidence of abnormal conditions.	6 months
SR 3.6.7.2	Perform a functional test for each hydrogen recombiner.	6 months
SR 3.6.7.3	Perform a CHANNEL CALIBRATION to include a System Functional Test for each hydrogen recombiner.	12 months

SMOOTH COPY
ITS SECTION 3.6 - BASES

B 3.6 CONTAINMENT SYSTEMS

B 3.6.1 Containment

BASES

BACKGROUND

The containment consists of the concrete Containment Building (CB), its steel liner, and the penetrations through this structure. The structure is designed to contain radioactive material that may be released from the reactor core following a design basis Loss of Coolant Accident. Additionally, this structure provides shielding from the fission products that may be present in the containment atmosphere following accident conditions.

The containment is a reinforced concrete structure with a cylindrical wall, a flat foundation mat, and a shallow dome roof. The cylinder wall is prestressed with a post tensioning system in the vertical and horizontal directions, and the dome roof is prestressed utilizing a two way pattern of tendons, which are an extension of the continuous vertical tendons. The inside surface of the containment is lined with a carbon steel liner to ensure a high degree of leak tightness during operating and accident conditions.

The concrete CB is required for structural integrity of the containment under Design Basis Accident (DBA) conditions. The steel liner and its penetrations establish the leakage limiting boundary of the containment. Maintaining the containment OPERABLE limits the leakage of fission product radioactivity from the containment to the environment. SR 3.6.1.1 leakage rate requirements comply with 10 CFR 50, Appendix J, Option B (Ref. 1), as modified by approved exemptions.

The isolation devices for the penetrations in the containment boundary are a part of the containment leak tight barrier. To maintain this leak tight barrier:

a. All penetrations required to be closed during accident conditions are either:

    1. capable of being closed by an OPERABLE automatic containment isolation system, or

(continued)

BASES (continued)

BACKGROUND (continued)

2. closed by manual valves, blind flanges, or de-activated automatic valves secured in their closed positions, except as provided in LCO 3.6.3, "Containment Isolation Valves";

b. Each air lock is OPERABLE, except as provided in LCO 3.6.2, "Containment Air Locks"; and

c. All equipment hatches are closed.

APPLICABLE SAFETY ANALYSES

The safety design basis for the containment is that the containment must withstand the pressures and temperatures of the limiting DBA without exceeding the design leakage rate.

The DBAs that result in a release of radioactive material within containment are a Loss Of Coolant Accident (LOCA), a Main Steam Line Break (MSLB), a feedwater line break, and a control element assembly ejection accident (Ref. 2). In the analysis of each of these accidents, it is assumed that containment is OPERABLE such that release of fission products to the environment is controlled by the rate of containment leakage. The containment was designed with an allowable leakage rate of 0.1% of containment air mass per day (Ref. 3). This leakage rate is defined in 10 CFR 50, Appendix J, Option B (Ref. 1), as L_a: the maximum allowable containment leakage rate at the calculated maximum peak containment pressure (P_a) of 52.0 psig, which results from the limiting design basis LOCA.

Satisfactory leakage rate test results are a requirement for the establishment of containment OPERABILITY.

The containment satisfies Criterion 3 of 10 CFR 50.36 (c)(2)(ii).

LCO

Containment OPERABILITY is maintained by limiting leakage to $\leq 1.0\ L_a$, except prior to the first startup after performing a required Containment Leakage Rate Testing Program leakage test. At this time, the applicable leakage limits must be met.

(continued)

BASES (continued)

LCO (continued)

Type A leakage rate testing measures the overall leakage rate of the containment. Type B leakage rate testing measures the local leakage rate of blind flanges, air locks and other devices which employ resilient seals. Type C leakage rate testing measures the local leakage rate of valves. Refer to reference 1 for a more detailed definition.

Compliance with this LCO will ensure a containment configuration, including equipment hatches, that is structurally sound and that will limit leakage to those leakage rates assumed in the safety analysis.

Individual leakage rates specified for the containment air lock (LCO 3.6.2) and purge valves with resilient seals (LCO 3.6.3) are not specifically part of the acceptance criteria of 10 CFR 50, Appendix J, Option B. Therefore, leakage rates exceeding these individual limits only result in the containment being inoperable when the leakage results in exceeding the overall acceptance criteria of 1.0 L_a.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material into containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, containment is not required to be OPERABLE in MODE 5 to prevent leakage of radioactive material from containment. The requirements for containment during MODE 6 are addressed in LCO 3.9.3, "Containment Penetrations."

ACTIONS

A.1

In the event containment is inoperable, containment must be restored to OPERABLE status within 1 hour. The 1 hour Completion Time provides a period of time to correct the problem commensurate with the importance of maintaining containment during MODES 1, 2, 3, and 4. This time period also ensures that the probability of an accident (requiring containment OPERABILITY) occurring during periods when containment is inoperable is minimal.

(continued)

BASES (continued)

ACTIONS (continued)

B.1 and B.2

If containment cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.1.1

Maintaining the containment OPERABLE requires compliance with the visual examinations and leakage rate test requirements of the Containment Leakage Rate Testing Program. Failure to meet air lock and purge valve with resilient seal leakage limits specified in LCO 3.6.2 and LCO 3.6.3 does not invalidate the acceptability of these overall leakage determinations unless their contribution to overall Type A, B, and C leakage causes that to exceed limits. As left leakage prior to the first startup after performing a required Containment Leakage Rate Testing Program leakage test is required to be $< 0.6\ L_a$ for combined Type B and C following an outage or shutdown that included Type B and C testing only, and $\leq 0.75\ L_a$ for overall Type A leakage following an outage or shutdown that included Type A testing. At all other times between required leakage rate tests, the acceptance criteria is based on an overall Type A leakage limit of $\leq 1.0\ L_a$. At $\leq 1.0\ L_a$ the offsite dose consequences are bounded by the assumptions of the safety analysis. SR Frequencies are as required by the Containment Leakage Rate Testing Program. These periodic testing requirements verify that the containment leakage rate does not exceed the leakage rate assumed in the safety analysis.

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.1.2

For ungrouted, post tensioned tendons, this SR ensures that the structural integrity of the containment will be maintained in accordance with the provisions of the Containment Tendon Surveillance Program. Testing and Frequency are consistent with the recommendations of Regulatory Guide 1.35 (Ref. 4).

REFERENCES

1. 10 CFR 50, Appendix J, Option B.
2. UFSAR, Section 3.8.
3. UFSAR, Section 6.2.
4. Regulatory Guide 1.35, Revision 1 and Draft of Revision 3.

B 3.6 CONTAINMENT SYSTEMS

B 3.6.2 Containment Air Locks

BASES

BACKGROUND

Containment air locks form part of the containment pressure boundary and provide a means for personnel access during all MODES of operation.

Each air lock is nominally a right circular cylinder, 9 ft.-6 inches in diameter, with a door at each end. The doors are interlocked to prevent simultaneous opening. During periods when containment is not required to be OPERABLE, the door interlock mechanism may be disabled, allowing both doors of an air lock to remain open for extended periods when frequent containment entry is necessary. Each air lock door has been designed and tested to certify its ability to withstand a pressure in excess of the maximum expected pressure following a Design Basis Accident (DBA) in containment. As such, closure of a single door supports containment OPERABILITY. Each of the doors contains double gasketed seals and local leakage rate testing capability to ensure pressure integrity. To effect a leak tight seal, the air lock design uses pressure seated doors (i.e., an increase in containment internal pressure results in increased sealing force on each door).

Each personnel air lock is provided with limit switches on both doors that provide local indication of door position.

The containment air locks form part of the containment pressure boundary. As such, air lock integrity and leak tightness is essential for maintaining the containment leakage rate within limit in the event of a DBA. Not maintaining air lock integrity or leak tightness may result in a leakage rate in excess of that assumed in the unit safety analysis.

(continued)

BASES (continued)

APPLICABLE SAFETY ANALYSES

The DBAs that result in a release of radioactive material within containment are a Loss Of Coolant Accident (LOCA), a Main Steam Line Break (MSLB), a feedwater line break, and a control element assembly (CEA) ejection accident (Ref. 2). In the analysis of each of these accidents, it is assumed that containment is OPERABLE such that release of fission products to the environment is controlled by the rate of containment leakage. The containment was designed with an allowable leakage rate of 0.1% of containment air mass per day (Ref. 3). This leakage rate is defined in 10 CFR 50, Appendix J, Option B, as the maximum allowable containment leakage rate at the calculated peak containment internal pressure P_a [52 psig], following a design basis LOCA. This allowable leakage rate forms the basis for the acceptance criteria imposed on the SRs associated with the air lock.

The containment air locks satisfy Criterion 3 of 10 CFR 50.36 (c)(2)(ii).

LCO

Each containment air lock forms part of the containment pressure boundary. As part of the containment pressure boundary, the air lock safety function is related to control of the containment leakage rate resulting from a DBA. Thus, each air lock's structural integrity and leak tightness are essential to the successful mitigation of such an event.

Each air lock is required to be OPERABLE. For the air lock to be considered OPERABLE, the air lock interlock mechanism must be OPERABLE, the air lock must be in compliance with the Type B air lock leakage test, and both air lock doors must be OPERABLE. The interlock allows only one air lock door of an air lock to be opened at one time. This provision ensures that a gross breach of containment does not exist when containment is required to be OPERABLE. Closure of a single door in each air lock is sufficient to provide a leak tight barrier following postulated events. Nevertheless, both doors are kept closed when the air lock is not being used for normal entry into or exit from containment.

(continued)

BASES (continued)

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, the containment air locks are not required in MODE 5 to prevent leakage of radioactive material from containment. The requirements for the containment air locks during MODE 6 are addressed in LCO 3.9.3, "Containment Penetrations."

ACTIONS

The ACTIONS are modified by a Note that allows entry and exit to perform repairs on the affected air lock component. If the outer door is inoperable, then it may be easily accessed for most repairs. If the inner door is inoperable, or if repairs on either door must be performed from the barrel side of the door then it is permissible to enter the air lock through the OPERABLE door, which means there is a short time during which the containment boundary is not intact (during access through the OPERABLE door). The ability to open the OPERABLE door, even if it means the containment boundary is temporarily not intact, is acceptable because of the low probability of an event that could pressurize the containment during the short time in which the OPERABLE door is expected to be open. After each entry and exit, the OPERABLE door must be immediately closed.

A second Note has been added to provide clarification that, for this LCO, separate Condition entry is allowed for each air lock. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable air lock. Complying with the Required Actions may allow for continued operation, and a subsequent inoperable air lock is governed by subsequent Condition entry and application of associated Required Actions. A third Note has been included that requires entry into the applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when leakage results in exceeding the overall containment leakage limit.

(continued)

BASES

ACTIONS (continued)

A.1, A.2, and A.3

With one air lock door inoperable in one or more containment air locks, the OPERABLE door must be verified closed (Required Action A.1) in each affected containment air lock. This ensures that a leak tight containment barrier is maintained by the use of an OPERABLE air lock door. This action must be completed within 1 hour. This specified time period is consistent with the ACTIONS of LCO 3.6.1, which requires containment be restored to OPERABLE status within 1 hour. Action A applies to any condition which affects only one side of the air lock such that closure of the opposite door maintains containment OPERABILITY. Examples of an inoperable air lock door are cracked viewglass, equalizing valve leaking, or door seals leaking.

In addition, the affected air lock penetration must be isolated by locking closed an OPERABLE air lock door within the 24 hour Completion Time. The 24 hour Completion Time is considered reasonable for locking the OPERABLE air lock door, considering the OPERABLE door of the affected air lock is being maintained closed.

Required Action A.3 verifies that an air lock with an inoperable door has been isolated by the use of a locked and closed OPERABLE air lock door. This ensures that an acceptable containment leakage boundary is maintained. The Completion Time of once per 31 days is based on engineering judgment and is considered adequate in view of the low likelihood of a locked door being mispositioned and other administrative controls. Required Action A.3 is modified by a Note that applies to air lock doors located in high radiation areas and allows these doors to be verified locked closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of the door, once it has been verified to be in the proper position, is small.

(continued)

BASES

ACTIONS

A.1, A.2, and A.3 (continued)

The Required Actions have been modified by two Notes. Note 1 ensures that only the Required Actions and associated Completion Times of Condition C are required if both doors in the same air lock are inoperable. With both doors in the same air lock inoperable, an OPERABLE door is not available to be closed. Required Actions C.1 and C.2 are the appropriate remedial actions. The exception of Note 1 does not affect tracking the Completion Time from the initial entry into Condition A; only the requirement to comply with the Required Actions. Note 2 allows use of the air lock for entry and exit for 7 days under administrative controls if both air locks have an inoperable door. This 7 day restriction begins when the second air lock is discovered inoperable. Containment entry may be required to perform Technical Specifications (TS) Surveillances and Required Actions, as well as other activities on equipment inside containment that are required by TS or activities on equipment that support TS-required equipment. This Note is not intended to preclude performing other activities (i.e., non-TS-required activities) if the containment was entered, using the inoperable air lock, to perform an allowed activity listed above. This allowance is acceptable due to the low probability of an event that could pressurize the containment during the short time that the OPERABLE door is expected to be open.

B.1, B.2, and B.3

With an air lock interlock mechanism inoperable in one or more air locks, the Required Actions and associated Completion Times are consistent with those specified in Condition A.

(continued)

BASES

ACTIONS

B.1, B.2, and B.3 (continued)

The Required Actions have been modified by two Notes. Note 1 ensures that only the Required Actions and associated Completion Times of Condition C are required if both doors in the same air lock are inoperable. With both doors in the same air lock inoperable, an OPERABLE door is not available to be closed. Required Actions C.1 and C.2 are the appropriate remedial actions. This Note applies if Actions A, B, and C are entered concurrently. Inoperable interlocks do not cause the doors to be inoperable. Note 2 allows entry into and exit from containment under the control of a dedicated individual stationed at the air lock to ensure that only one door is opened at a time (i.e., the individual performs the function of the interlock). Required Actions B.1, B.2, and B.3 are suspended while the air lock is under administrative control as allowed by Note 2.

Required Action B.3 is modified by a Note that applies to air lock doors located in high radiation areas and allows these doors to be verified locked closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of the door, once it has been verified to be in the proper position, is small.

C.1, C.2, and C.3

With one or more air locks inoperable for reasons other than those described in Condition A or B, Required Action C.1 requires action to be initiated immediately to evaluate previous combined leakage rates using current air lock test results. An evaluation is acceptable since it is overly conservative to immediately declare the containment inoperable if both doors in an air lock have failed a seal test or if the overall air lock leakage is not within limits. In many instances (e.g., only one seal per door has failed), containment remains OPERABLE, yet only 1 hour (per LCO 3.6.1) would be provided to restore the air lock door to OPERABLE status prior to requiring a plant shutdown. In addition, even with both doors failing the seal test, the overall containment leakage rate can still be within limits.

(continued)

BASES

ACTIONS

C.1, C.2, and C.3 (continued)

Required Action C.2 requires that one door in the affected containment air lock must be verified to be closed. This action must be completed within the 1 hour Completion Time. This specified time period is consistent with the ACTIONS of LCO 3.6.1, which requires that containment be restored to OPERABLE status within 1 hour.

Additionally, the affected air lock(s) must be restored to OPERABLE status within the 24 hour Completion Time. The specified time period is considered reasonable for restoring an inoperable air lock to OPERABLE status, assuming that at least one door is maintained closed in each affected air lock.

D.1 and D.2

If the inoperable containment air lock cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.2.1

Maintaining containment air locks OPERABLE requires compliance with the leakage rate test requirements of the Containment Leakage Rate Testing Program. This SR reflects the leakage rate testing requirements with regard to air lock leakage (Type B leakage tests). The acceptance criteria were established during initial air lock and containment OPERABILITY testing. The periodic testing requirements verify that the air lock leakage does not exceed the allowed fraction of the overall containment leakage rate. The Frequency is required by the Containment Leakage Rate Testing Program.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.2.1 (continued)

The SR has been modified by two Notes. Note 1 states that an inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. This is considered reasonable since either air lock door is capable of providing a fission product barrier in the event of a DBA. Note 2 has been added to this SR requiring the results to be evaluated against the acceptance criteria which is applicable to SR 3.6.1.1. This ensures that air lock leakage is properly accounted for in determining the combined Type Band C containment leakage rate.

SR 3.6.2.2

The air lock interlock is designed to prevent simultaneous opening of both doors in a single air lock. Since both the inner and outer doors of an air lock are designed to withstand the maximum expected post accident containment pressure, closure of either door will support containment OPERABILITY. Thus, the door interlock feature supports containment OPERABILITY while the air lock is being used for personnel transit into and out of containment. Periodic testing of this interlock demonstrates that the interlock will function as designed and that simultaneous opening of the inner and outer doors will not inadvertently occur. Due to the purely mechanical nature of this interlock, and given that the interlock mechanism is not normally challenged when containment is used for entry and exit (procedures require strict adherence to single door opening), this test is only required to be performed every 24 months. The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage, and the potential for loss of containment OPERABILITY if the Surveillance were performed with the reactor at power. The 24 month Frequency for the interlock is justified based on generic operating experience. The Frequency is based on engineering judgment and is considered adequate given that the interlock is not challenged during the use of the airlock.

REFERENCES

1. 10 CFR 50, Appendix J, Option B.
2. UFSAR, Section 3.8.
3. UFSAR, Section 6.2.
4. UFSAR, Section 15.6

B 3.6 CONTAINMENT SYSTEMS

B 3.6.3 Containment Isolation Valves

BASES

BACKGROUND	The containment isolation valves form part of the containment pressure boundary and provide a means for fluid penetrations not serving accident consequence limiting systems to be provided with two isolation barriers that are closed on an automatic isolation signal. These isolation devices are either passive or active (automatic). Manual valves, de-activated automatic valves secured in their closed position (including check valves with flow through the valve secured), blind flanges, and closed systems are considered passive devices. Check valves, or other automatic valves designed to close without operator action following an accident, are considered active devices. Two barriers in series are provided for each penetration so that no single credible failure or malfunction of an active component can result in a loss of isolation or leakage that exceeds limits assumed in the safety analysis. One of these barriers may be a closed system.

Containment isolation occurs upon receipt of a high containment pressure signal or a low pressurizer pressure signal. The containment isolation signal closes automatic containment isolation valves in fluid penetrations not required for operation of Engineered Safety Feature Systems in order to prevent leakage of radioactive material. Upon actuation of safety injection, automatic containment isolation valves also isolate systems not required for containment or RCS heat removal. Other penetrations are isolated by the use of valves in the closed position or blind flanges. As a result, the containment isolation valves (and blind flanges) help ensure that the containment atmosphere will be isolated in the event of a release of radioactive material to containment atmosphere from the RCS following a Design Basis Accident (DBA).

The OPERABILITY requirements for containment isolation valves help ensure that containment is isolated within the time limits assumed in the safety analysis. Therefore, the OPERABILITY requirements provide assurance that the containment function assumed in the accident analysis will be maintained.

(continued)

BASES

BACKGROUND (continued)

The purge valves were designed for intermittent operation, providing a means of removing airborne radioactivity caused by minor RCS leakage prior to personnel entry into containment. There are two sets of purge valves: refueling purge valves and power access purge valves. The refueling and power access supply and exhaust lines are each supplied with inside and outside containment isolation valves but share common supply and exhaust headers.

The refueling purge valves are designed for purging the containment atmosphere to the unit stack while introducing filtered makeup from the outside to provide adequate ventilation for personnel comfort when the unit is shut down during refueling operations and maintenance. Motor operated isolation valves are provided inside and outside the containment. The valves are operated manually from the control room. The valves will close automatically upon receipt of a containment purge isolation actuation signal and a containment isolation actuation signal. Because of their large size, the refueling purge valves are not qualified for automatic closure from their open position under DBA conditions. Therefore, the refueling purge valves are maintained closed in MODES 1, 2, 3, and 4 to ensure the containment boundary is maintained.

Open refueling purge valves, or a failure of the power access purge valves to close, following an accident that releases contamination to the containment atmosphere would cause a significant increase in the containment leakage rate.

APPLICABLE SAFETY ANALYSES

The containment isolation valve LCO was derived from the assumptions related to minimizing the loss of reactor coolant inventory and establishing the containment boundary during major accidents. As part of the containment boundary, containment isolation valve OPERABILITY supports leak tightness of the containment. Therefore, the safety analysis of any event requiring isolation of containment is applicable to this LCO.

(continued)

BASES

APPLICABLE SAFETY ANALYSES

The DBAs that result in a release of radioactive material within containment are a Loss Of Coolant Accident (LOCA), a Main Steam Line Break (MSLB), a feedwater line break, and a control element assembly ejection accident. In the analysis for each of these accidents, it is assumed that containment isolation valves are either closed or function to close within the required isolation time following event initiation. This ensures that potential paths to the environment through containment isolation valves (including containment purge valves) are minimized. The safety analysis assumes that the refueling purge valves are closed at event initiation.

The DBA analysis assumes that, within 60 seconds after the accident, isolation of the containment is complete and leakage terminated except for the design leakage rate, L_a. The containment isolation total response time of 60 seconds includes signal delay, diesel generator startup (for loss of offsite power), and containment isolation valve stroke times.

The single failure criterion required to be imposed in the conduct of unit safety analyses was considered in the original design of the containment purge valves. Two valves in series on each purge line provide assurance that both the supply and exhaust lines could be isolated even if a single failure occurred. The inboard and outboard isolation valves on each line are provided with diverse power sources.

The refueling purge valves may be unable to close in the environment following a LOCA. Therefore, each of the refueling purge valves is required to remain sealed closed during MODES 1, 2, 3, and 4. In this case, the single failure criterion remains applicable to the containment refueling purge valves due to failure in the control circuit associated with each valve. Again, the purge system valve design precludes a single failure from compromising the containment boundary as long as the system is operated in accordance with the subject LCO. The power access purge valves are capable of closing under accident conditions. Therefore, they are allowed to be open for limited periods during power operation.

The OPERABILITY of main steam safety valves, main steam isolation valves, main feedwater isolation valves, and main steam atmospheric dump valves is covered by Specifications 3.7.1, 3.7.2, 3.7.3 and 3.7.4 respectively.

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

The containment isolation valves satisfy Criterion 3 of 10 CFR 50.36 (c)(2)(ii).

LCO

Containment isolation valves form a part of the containment boundary. The containment isolation valve safety function is related to minimizing the loss of reactor coolant inventory and establishing the containment boundary during a DBA.

The automatic power operated isolation valves are required to have isolation times within limits and to actuate on an automatic isolation signal. The refueling purge valves must be maintained sealed closed. The valves covered by this LCO are listed with their associated stroke times in the UFSAR (Ref. 1).

The normally closed isolation valves are considered OPERABLE when manual valves are closed, automatic valves are de-activated and secured in their closed position, blind flanges are in place, and closed systems are intact. These passive isolation valves or devices are those listed in Reference 2. ESF actuated valves are considered OPERABLE when locked, sealed, or otherwise prevented from unintended operation, in their actuated position.

Purge valves with resilient seals must meet additional leakage rate requirements. The other containment isolation valve leakage rates are addressed by LCO 3.6.1, "Containment," as Type C testing.

Each containment isolation valve shall be demonstrated OPERABLE prior to returning the valve to service afer maintenance, repair, or replacement work is performed on the valve or its associated actuator, control, or power circuit.

This LCO provides assurance that the containment isolation valves and purge valves will perform their designed safety functions to minimize the loss of reactor coolant inventory and establish the containment boundary during accidents.

(continued)

BASES (continued)

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, the containment isolation valves are not required to be OPERABLE in MODE 5. The requirements for containment isolation valves during MODE 6 are addressed in LCO 3.9.3, "Containment Penetrations."

ACTIONS

Opening of vent, drain, and test connections located between the inboard and outboard Containment Isolation Valve (CIV) could result in a loss of OPERABILITY for the affected penetration flow path. The appropriate actions for the associated CIV must be met for these connections.

The ACTIONS are modified by a Note allowing penetration flow paths, except for 42 inch purge valve penetration flow paths, to be unisolated intermittently under administrative controls. These administrative controls consist of stationing a dedicated operator at the valve controls, who is in continuous communication with the control room. In this way, the penetration can be rapidly isolated when a need for containment isolation is indicated. Due to the size of the containment refueling purge line penetration and the fact that those penetrations exhaust directly from the containment atmosphere to the environment, these valves may not be opened under administrative controls.

A second Note has been added to provide clarification that, for this LCO, separate Condition entry is allowed for each penetration flow path. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable containment isolation valve. Complying with the Required Actions may allow for continued operation, and subsequent inoperable containment isolation valves are governed by subsequent Condition entry and application of associated Required Actions.

The ACTIONS are further modified by a third Note, which ensures that appropriate remedial actions are taken, if necessary, if the affected systems are rendered inoperable by an inoperable containment isolation valve.

A fourth Note has been added that requires entry into the applicable Conditions and Required Actions of LCO 3.6.1 when leakage results in exceeding the overall containment leakage limit.

(continued)

BASES

ACTIONS (continued)

A.1 and A.2

In the event one containment isolation valve in one or more penetration flow paths is inoperable except for purge valve leakage not within limit (refer to Action D), the affected penetration flow path must be isolated. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic containment isolation valve, a closed manual valve, a blind flange, and a check valve with flow through the valve secured. For penetrations isolated in accordance with Required Action A.1, the device used to isolate the penetration should be the closest available one to containment. Required Action A.1 must be completed within the 4 hour Completion Time. The 4 hour Completion Time is reasonable, considering the time required to isolate the penetration and the relative importance of supporting containment OPERABILITY during MODES 1, 2, 3, and 4.

For affected penetration flow paths that cannot be restored to OPERABLE status within the 4 hour Completion Time and that have been isolated in accordance with Required Action A.1, the affected penetration flow paths must be verified to be isolated on a periodic basis. This is necessary to ensure that containment penetrations required to be isolated following an accident and no longer capable of being automatically isolated will be in the isolation position should an event occur. This Required Action does not require any testing or device manipulation. Rather, it involves verification, through a system walkdown, that those isolation devices outside containment and capable of being mispositioned are in the correct position. The Completion Time of "once per 31 days for isolation devices outside containment" is appropriate considering the fact that the devices are operated under administrative controls and the probability of their misalignment is low. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

(continued)

BASES

ACTIONS

A.1 and A.2 (continued)

Condition A has been modified by a Note indicating that this Condition is only applicable to those penetration flow paths with two containment isolation valves. For penetration flow paths with only one containment isolation valve and a closed system, Condition C provides appropriate actions.

Required Action A.2 is modified by a Note that applies to isolation devices located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of these devices, once they have been verified to be in the proper position, is small.

B.1

With two containment isolation valves in one or more penetration flow paths inoperable except for purge valve leakage not within limit (refer to Action D), the affected penetration flow path must be isolated within 1 hour. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve, a closed manual valve, and a blind flange. The 1 hour Completion Time is consistent with the ACTIONS of LCO 3.6.1. In the event the affected penetration is isolated in accordance with Required Action B.1, the affected penetration must be verified to be isolated on a periodic basis per Required Action A.2, which remains in effect. This periodic verification is necessary to assure leak tightness of containment and that penetrations requiring isolation following an accident are isolated. The Completion Time of once per 31 days for verifying each affected penetration flow path is isolated is appropriate considering the fact that the valves are operated under administrative controls and the probability of their misalignment is low.

(continued)

BASES

ACTIONS

B.1 (continued)

Condition B is modified by a Note indicating this Condition is only applicable to penetration flow paths with two containment isolation valves. Condition A of this LCO addresses the condition of one containment isolation valve inoperable in this type of penetration flow path.

C.1 and C.2

With one or more penetration flow paths with one containment isolation valve inoperable, the inoperable valve must be restored to OPERABLE status or the affected penetration flow path must be isolated. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve, a closed manual valve, and a blind flange. A check valve may not be used to isolate the affected penetration. Required Action C.1 must be completed within the 4 hour Completion Time. The specified time period is reasonable, considering the relative stability of the closed system (hence, reliability) to act as a penetration isolation boundary and the relative importance of supporting containment OPERABILITY during MODES 1, 2, 3, and 4. In the event the affected penetration is isolated in accordance with Required Action C.1, the affected penetration flow path must be verified to be isolated on a periodic basis. This is necessary to assure leak tightness of containment and that containment penetrations requiring isolation following an accident are isolated. The Completion Time of once per 31 days for verifying that each affected penetration flow path is isolated is appropriate considering the valves are operated under administrative controls and the probability of their misalignment is low.

Condition C is modified by a Note indicating that this Condition is only applicable to those penetration flow paths with only one containment isolation valve and a closed system. This Note is necessary since this Condition is written to specifically address those penetration flow paths which are neither part of the reactor coolant pressure boundary nor connected directly to the containment atmosphere (10 CFR 150, APP. A, GDC 57).

(continued)

BASES

ACTIONS

C.1 and C.2 (continued)

Required Action C.2 is modified by a Note that applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of these valves, once they have been verified to be in the proper position, is small.

D.1, D.2, and D.3

In the event one or more containment purge valves in one or more penetration flow paths are not within the purge valve leakage limits, purge valve leakage must be restored to within limits, or the affected penetration must be isolated. The method of isolation must be by the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve with resilient seals, or a blind flange. A purge valve with resilient seals utilized to satisfy Required Action D.1 must have been demonstrated to meet the leakage requirements of SR 3.6.3.6. The specified Completion Time is reasonable, considering that one containment purge valve remains closed so that a gross breach of containment does not exist.

In accordance with Required Action D.2, this penetration flow path must be verified to be isolated on a periodic basis. The periodic verification is necessary to ensure that containment penetrations required to be isolated following an accident, which are no longer capable of being automatically isolated, will be in the isolation position should an event occur. This Required Action does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown, that those isolation devices outside containment capable of being mispositioned are in the correct position.

(continued)

BASES

ACTIONS

D.1, D.2 and D.3 (continued)

For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

For the containment purge valve with a resilient seal that is isolated in accordance with Required Action D.1, SR 3.6.3.6 must be performed at least once every 92 days. This assures that degradation of the resilient seal is detected and confirms that the leakage rate of the containment purge valve does not increase during the time the penetration is isolated. The normal Frequency for SR 3.6.3.6, 184 days, is based on an NRC initiative, Generic Issue B-20 (Ref. 3). Since more reliance is placed on a single valve while in this Condition, it is prudent to perform the SR more often. Therefore, a Frequency of once per 92 days was chosen and has been shown to be acceptable based on operating experience.

E.1 and E.2

If the Required Actions and associated Completion Times are not met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.3.1

Each 42 inch containment purge valve is required to be verified sealed closed at 31 day intervals. This Surveillance is designed to ensure that a gross breach of containment is not caused by an inadvertent or spurious opening of a containment purge valve. Detailed analysis of the refueling purge valves failed to conclusively demonstrate their ability to close during a LOCA in time to limit offsite doses. Therefore, these valves are required to be in the sealed closed position during MODES 1, 2, 3, and 4. A containment purge valve that is sealed closed must have motive power to the valve operator removed. This can be accomplished by de-energizing the source of electric power. In this application, the term "sealed" has no connotation of leak tightness. The Frequency is a result of an NRC initiative, Generic Issue B-24 (Ref. 4), related to containment purge valve use during unit operations. This SR is not required to be met while in Condition D of this LCO. This is reasonable since the penetration flow path would be isolated.

SR 3.6.3.2

This SR ensures that the power access purge valves are closed as required or, if open, open for an allowable reason. If a purge valve is open in violation of this SR, the valve is considered inoperable. If the inoperable valve is not otherwise known to have excessive leakage when closed, it is not considered to have leakage outside of limits. The SR is not required to be met when the purge valves are open for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open. The power access purge valves are capable of closing in the environment following a LOCA. Therefore, these valves are allowed to be open for limited periods of time. The 31 day Frequency is consistent with other containment isolation valve requirements discussed in SR 3.6.3.3.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.3.3

This SR requires verification that each containment isolation manual valve and blind flange located outside containment and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside the containment boundary is within design limits. This SR does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown, that those containment isolation valves outside containment and capable of being mispositioned are in the correct position. Since verification of valve position for containment isolation valves outside containment is relatively easy, the 31 day Frequency is based on engineering judgment and was chosen to provide added assurance of the correct positions. Containment isolation valves that are open under administrative controls are not required to meet the SR during the time the valves are open. This SR does not apply to valves that are locked, sealed, or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing or securing.

The Note applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, 3, 4 and for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in the proper position, is small.

SR 3.6.3.4

This SR requires verification that each containment isolation manual valve and blind flange located inside containment and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside the containment boundary is within design limits. For containment isolation valves inside containment, the Frequency of "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is appropriate, since these containment isolation valves are operated under

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.3.4 (continued)

administrative controls and the probability of their misalignment is low. Containment isolation valves that are open under administrative controls are not required to meet the SR during the time that they are open. This SR does not apply to valves that are locked, sealed, or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing or securing.

The Note allows valves and blind flanges located in high radiation areas to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, 3 and 4 for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in their proper position, is small.

SR 3.6.3.5

Verifying that the isolation time of each automatic power operated containment isolation valve is within limits is required to demonstrate OPERABILITY. The isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analysis. The isolation time and Frequency of this SR are in accordance with the Inservice Testing Program.

SR 3.6.3.6

For containment purge valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J, Option B (Ref. 5), is required to ensure OPERABILITY. Industry operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than do other seal types. Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between containment and the environment), a Frequency of 184 days was established as part of the NRC resolution of Generic Issue B-20, "Containment Leakage Due to Seal Deterioration" (Ref. 3).

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.6.3.6 (continued)

Additionally, this SR must be performed within 92 days after opening the valve. The 92 day Frequency was chosen recognizing that cycling the valve could introduce additional seal degradation (beyond that occurring to a valve that has not been opened). Thus, decreasing the interval (from 184 days) is a prudent measure after a valve has been opened.

SR 3.6.3.7

Automatic containment isolation valves close on a containment isolation signal to prevent leakage of radioactive material from containment following a DBA. This SR ensures each automatic containment isolation valve will actuate to its isolation position on an actual or simulated actuation signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The 18 month Frequency was developed considering it is prudent that this SR be performed only during a unit outage, since isolation of penetrations would eliminate cooling water flow and disrupt normal operation of many critical components. Operating experience has shown that these components usually pass this SR when performed on the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

REFERENCES

1. UFSAR, Section 6.2.4.
2. UFSAR, Section 6.2.6.
3. Generic Issue B-20.
4. Generic Issue B-24.
5. 10 CFR 50, Appendix J, Option B.

B 3.6 CONTAINMENT SYSTEMS

B 3.6.4 Containment Pressure

BASES

BACKGROUND

The containment pressure is limited during normal operation to preserve the initial conditions assumed in the accident analyses for a Loss Of Coolant Accident (LOCA) or Main Steam Line Break (MSLB). These limits also prevent the containment pressure from exceeding the containment design negative pressure differential with respect to the outside atmosphere in the event of inadvertent actuation of the Containment Spray System.

Containment pressure is a process variable that is monitored and controlled. The containment pressure limits are derived from the input conditions used in the containment functional analyses and the containment structure external pressure analysis. Should operation occur outside these limits coincident with a Design Basis Accident (DBA), post accident containment pressures could exceed calculated values.

APPLICABLE SAFETY ANALYSES

Containment internal pressure is an initial condition used in the DBA analyses to establish the maximum peak containment internal pressure. The limiting DBAs considered for determining the maximum containment internal pressure (P_a) are the LOCA and MSLB. A double ended discharge line break LOCA with maximum ECCS results in the highest calculated internal containment pressure of 52.0 psig, which is below the internal design pressure of 60 psig. The postulated DBAs are analyzed assuming degraded containment Engineered Safety Feature (ESF) Systems (i.e., assuming the loss of one ESF bus, which is the worst case single active failure, resulting in one train of the Containment Spray System being rendered inoperable). It is this maximum containment pressure that is used to ensure that the licensing basis dose limitations are met.

The initial pressure condition used in the containment analysis bounds the containment pressure allowed during normal operation. The LCO limit of 2.5 psig ensures that, in the event of an accident, the maximum peak containment internal pressure, 52.0 psig, and the maximum accident design pressure for containment, 60 psig, are not exceeded.

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

The containment was also designed for an internal pressure equal to 4.0 psig below external pressure in order to withstand the resultant pressure drop from an accidental actuation of the Containment Spray System. The LCO limit of -0.3 psig ensures that operation within the design limit of -4.0 psig is maintained. The maximum calculated external pressure that would occur as a result of an inadvertent actuation of the Containment Spray System is 2.6 psig.

Containment pressure satisfies Criterion 2 of 10 CFR 50.36 (c)(2)(ii).

LCO

Maintaining containment pressure less than or equal to the LCO upper pressure limit ensures that, in the event of a DBA, the resultant peak containment accident pressure will remain below the containment design pressure. Maintaining containment pressure greater than or equal to the LCO lower pressure limit ensures that the containment will not exceed the design negative pressure differential following the inadvertent actuation of the Containment Spray System.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. Since maintaining containment pressure within limits is essential to ensure initial conditions assumed in the accident analysis are maintained, the LCO is applicable in MODES 1, 2, 3, and 4.

In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, maintaining containment pressure within the limits of the LCO is not required in MODE 5 or 6.

(continued)

BASES

ACTIONS

A.1

When containment pressure is not within the limits of the LCO, containment pressure must be restored to within these limits within 1 hour. The Required Action is necessary to return operation to within the bounds of the containment analysis. The 1 hour Completion Time is consistent with the ACTIONS of LCO 3.6.1, "Containment," which requires that containment be restored to OPERABLE status within 1 hour.

B.1 and B.2

If containment pressure cannot be restored to within limits within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.4.1

Verifying that containment pressure is within limits ensures that operation remains within the limits assumed in the accident analysis. The 12 hour Frequency of this SR was developed after taking into consideration operating experience related to trending of containment pressure variations during the applicable MODES. Furthermore, the 12 hour Frequency is considered adequate in view of other indications available in the control room, including alarms, to alert the operator to an abnormal containment pressure condition.

REFERENCES

None.

B 3.6 CONTAINMENT SYSTEMS

B 3.6.5 Containment Air Temperature

BASES

BACKGROUND	The containment structure serves to contain radioactive material that may be released from the reactor core following a Design Basis Accident (DBA). The containment average air temperature is limited during normal operation to preserve the initial conditions assumed in the accident analyses for a Loss Of Coolant Accident (LOCA) or Main Steam Line Break (MSLB). The containment average air temperature limit is derived from the input conditions used in the containment functional analyses and the containment structure external pressure analyses. This LCO ensures that initial conditions assumed in the analysis of containment response to a DBA are not violated during unit operations. The total amount of energy to be removed from containment by the Containment Spray System during post accident conditions is dependent on the energy released to the containment due to the event, as well as the initial containment temperature and pressure. The higher the initial temperature, the more energy that must be removed, resulting in a higher peak containment pressure and temperature. Exceeding containment design pressure may result in leakage greater than that assumed in the accident analysis (Ref. 1). Operation with containment temperature in excess of the LCO limit violates an initial condition assumed in the accident analysis.
APPLICABLE SAFETY ANALYSES	Containment average air temperature is an initial condition used in the DBA analyses that establishes the containment environmental qualification operating envelope for both pressure and temperature. The limit for containment average air temperature ensures that operation is maintained within the assumptions used in the DBA analysis for containment. The accident analyses and evaluations considered both LOCAs and MSLBs for determining the maximum peak containment pressures and temperatures. The worst case LOCA generates larger mass and energy releases than the worst case MSLB; however, the MSLB event results in a higher peak temperature than the LOCA event. The initial pre-accident temperature inside containment was assumed to be 120°F (Ref. 2).

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)	The initial containment average air temperature condition of 120°F resulted in a maximum vapor temperature in containment of 398.5°F. The temperature of the containment steel liner and concrete structure reach approximately 230°F and 220°F, respectively. The containment average air temperature limit of 120°F ensures that, in the event of an accident, the maximum design temperature for containment, 300°F, is not exceeded. The consequence of exceeding this design temperature may be the potential for degradation of the containment structure under accident loads. The LCO limit of 117°F has been derived to account for instrument inaccuracies. The indicated limit of 117°F ensures that the actual limit of 120° will not be exceeded. Containment average air temperature satisfies Criterion 2 of 10 CFR 50.36 (c)(2)(ii).
LCO	During a DBA, with an initial containment average air temperature less than or equal to the LCO temperature limit, the resultant peak accident temperature is maintained below the containment design temperature. As a result, the ability of containment to perform its function is ensured.
APPLICABILITY	In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, maintaining containment average air temperature within the limit is not required in MODE 5 or 6.

(continued)

BASES (continued)

ACTIONS

A.1

When containment average air temperature is not within the limit of the LCO, it must be restored to within limit within 8 hours. This Required Action is necessary to return operation to within the bounds of the containment analysis. The 8 hour Completion Time is acceptable considering the sensitivity of the analysis to variations in this parameter and provides sufficient time to correct minor problems.

B.1 and B.2

If the containment average air temperature cannot be restored to within its limit within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.5.1

Verifying that containment average air temperature is within the LCO limit ensures that containment operation remains within the limit assumed for the containment analyses. In order to determine the containment average air temperature, an arithmetic average is calculated using measurements taken at locations within the containment selected to provide a representative sample of the overall containment atmosphere. The 24 hour Frequency of this SR is considered acceptable based on the observed slow rates of temperature increase within containment as a result of environmental heat sources (due to the large volume of containment). Furthermore, the 24 hour Frequency is considered adequate in view of other indications available in the control room, including alarms, to alert the operator to an abnormal containment temperature condition.

(continued)

BASES

SURVEILLANCE REQUIREMENTS	SR 3.6.5.1 (continued) The Primary containment average air temperature is determined by taking the arithmetical average of the temperatures at any five of the following locations: a. Nominal Elevation 85'- 0" e. Nominal Elevation 145' - 0" b. Nominal Elevation 85'- 0" f. Nominal Elevation 188' - 0" c. Nominal Elevation 126'- 0" g. Nominal Elevation 188' - 0" d. Nominal Elevation 126'- 0"
REFERENCES	1. UFSAR, Section 6.2 2. UFSAR, Section 9.4

B 3.6 CONTAINMENT SYSTEMS

B 3.6.6 Containment Spray System

BASES

BACKGROUND

The Containment Spray System provides containment atmosphere cooling to limit post accident pressure and temperature in containment to less than the design values. Reduction of containment pressure and the iodine removal capability of the spray reduce the release of fission product radioactivity from containment to the environment, in the event of a Design Basis Accident (DBA), to within limits. The Containment Spray System is designed to the requirements of 10 CFR 50, Appendix A, GDC 38, "Containment Heat Removal," GDC 39, "Inspection of Containment Heat Removal Systems," GDC 40, "Testing of Containment Heat Removal Systems," GDC 41, "Containment Atmosphere Cleanup," GDC 42, "Inspection of Containment Atmosphere Cleanup Systems," and GDC 43, "Testing of Containment Atmosphere Cleanup Systems" (Ref. 1).

The Containment Spray System is an Engineered Safety Feature (ESF) System. It is designed to ensure that the heat removal capability required during the post accident period can be attained.

The Containment Spray System consists of two separate trains of equal capacity, each capable of meeting the design bases. Each train includes a containment spray pump, a shutdown cooling heat exchanger, spray headers, nozzles, valves, and piping. Each train is powered from a separate ESF bus. The Refueling Water Tank (RWT) supplies borated water to the containment spray during the injection phase of operation. In the recirculation mode of operation, containment spray pump suction is transferred from the RWT to the containment sump(s).

The Containment Spray System provides a spray of cold borated water into the upper regions of containment to reduce containment pressure and temperature, to provide hydrogen mixing, and to reduce the concentration of fission products in the containment atmosphere during a DBA. The RWT solution temperature is an important factor in determining the heat removal capability of the Containment Spray System during the injection phase. In both the

(continued)

BASES

BACKGROUND (continued)

injection phase and the recirculation mode of operation, heat is removed from the spray water by the shutdown cooling heat exchangers. Each train of the Containment Spray System provides adequate spray coverage to meet 100% of the system design requirements for containment heat removal and 100% of the iodine removal design bases.

The Containment Spray System is actuated either automatically by a containment High-High pressure signal or manually. An automatic actuation starts the two Containment Spray System pumps, opens the containment spray header isolation valves and begins the injection phase. A manual actuation of the Containment Spray System is available on the main control board to begin the same sequence. The injection phase continues until an RWT level Low signal is received. The Low level for the RWT generates a recirculation actuation signal that aligns valves from the containment spray pump suction to the containment sump. The Containment Spray System in recirculation mode maintains an equilibrium temperature between the containment atmosphere and the recirculated sump water. Operation of the Containment Spray System in the recirculation mode is controlled by the operator in accordance with the emergency operating procedures.

Hydrogen mixing within the containment is accomplished by the Containment Spray System and the containment internal structure design, which permits convective mixing and prevents entrapment. The Containment Spray System prevents localized accumulations of hydrogen.

The Containment Spray System reduces the potential for breach of containment due to a hydrogen oxygen reaction by providing a uniformly mixed post accident containment atmosphere, thereby minimizing the potential for local hydrogen burns due to a local pocket of hydrogen above the flammable concentration and giving the operator the capability of preventing the occurrence of a bulk hydrogen burn inside containment per 10 CFR 50.44, "Standards for Combustible Gas Control Systems in Light- Water-Cooled Reactors" (Ref. 7), and 10 CFR 50, GDC 41, "Containment Atmosphere Cleanup" (Ref. 1).

(continued)

BASES

BACKGROUND (continued)	The Containment Spray System accelerates the air mixing process between the upper dome space of the containment atmosphere during LOCA operations. It also prevents any hot spot air pockets during the containment cooling mode and avoids any hydrogen concentration in pocket areas.
APPLICABLE SAFETY ANALYSES	The Containment Spray System limits the temperature and pressure that could be experienced following a DBA. The Containment Spray System is required to be capable of reducing containment pressure to 1/2 the peak pressure within 24 hours following a DBA. The limiting DBAs considered relative to containment temperature and pressure are the Loss Of Coolant Accident (LOCA) and the Main Steam Line Break (MSLB). The DBA LOCA and MSLB are analyzed using computer codes designed to predict the resultant containment pressure and temperature transients. No DBAs are assumed to occur simultaneously or consecutively. The postulated DBAs are analyzed with regard to containment ESF systems, assuming the loss of one ESF bus, which is the worst case single active failure, resulting in one train of the Containment Spray System being rendered inoperable. The analysis and evaluation show that under the worst case scenario, the highest peak containment pressure is 52.0 psig (experienced during a LOCA). The analysis shows that the peak containment vapor temperature is 398.5°F (experienced during a MSLB). Both results are within the design. (See the Bases for Specifications 3.6.4, "Containment Pressure," and 3.6.5, "Containment Air Temperature," for a detailed discussion.) The analyses and evaluations assume a power level of 102% RTP, one containment spray train operating, and initial (pre-accident) conditions of 120°F and 16.7 psia. The analyses also assume a response time delayed initiation in order to provide a conservative calculation of peak containment pressure and temperature responses. The effect of an inadvertent containment spray actuation has been analyzed. An inadvertent spray actuation reduces the containment pressure to -2.6 psig due to the sudden cooling effect in the interior of the air tight containment. Additional discussion is provided in the Bases for Specification 3.6.4.

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

The modeled Containment Spray System actuation from the containment analysis is based upon a response time associated with exceeding the containment High-High pressure setpoint to achieve full flow through the containment spray nozzles. The Containment Spray System total response time of 91 seconds includes diesel generator startup (for loss of offsite power), block loading of equipment, containment spray pump startup, and spray line filling (Ref. 2).

The Containment Spray System mixes the containment atmosphere to provide a uniform hydrogen concentration. Hydrogen may accumulate in containment following a LOCA as a result of:

a. A metal steam reaction between the zirconium fuel rod cladding and the reactor coolant;

b. Radiolytic decomposition of water in the Reactor Coolant System (RCS) and the containment sump;

c. Hydrogen in the RCS at the time of the LOCA (i.e., hydrogen dissolved in the reactor coolant and hydrogen gas in the pressurizer vapor space); or

d. Corrosion of metals exposed to Containment Spray System and Emergency Core Cooling Systems solution.

To evaluate the potential for hydrogen accumulation in containment following a LOCA, the hydrogen generation as a function of time following the initiation of the accident is calculated. Conservative assumptions recommended by Reference 8 are used to maximize the amount of hydrogen calculated.

The Containment Spray System satisfies Criterion 3 of 10 CFR 50.36 (c)(2)(ii).

LCO

During a DBA, one containment spray train is required to maintain the containment peak pressure and temperature below the design limits (Ref. 5), to remove iodine from the containment atmosphere to maintain concentrations below those assumed in the safety analysis, and provide hydrogen mixing. To ensure that these requirements are met, two containment spray trains must be OPERABLE.

(continued)

BASES

LCO (continued)

Therefore, in the event of an accident, the minimum requirements are met, assuming that the worst case single active failure occurs.

Each Containment Spray System typically includes a spray pump, a shutdown cooling heat exchanger, spray headers, nozzles, valves, piping, instruments, and controls to ensure an OPERABLE flow path capable of taking suction from the RWT upon an ESF actuation signal and automatically transferring suction to the containment sump.

APPLICABILITY

In MODES 1, 2, and 3, and Mode 4 with RCS pressure ≥ 385 psia, a DBA could cause a release of radioactive material to containment and an increase in containment pressure and temperature, requiring the operation of the containment spray trains.

In MODE 4 with RCS pressure < 385 psia and MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Thus, the Containment Spray System is not required to be OPERABLE in these MODES.

ACTIONS

A.1

With one containment spray train inoperable, the inoperable containment spray train must be restored to OPERABLE status within 72 hours. In this Condition, the remaining OPERABLE spray train is adequate to perform the iodine removal, hydrogen mixing, and containment cooling functions. The 72 hour Completion Time takes into account the redundant heat removal capability afforded by the Containment Spray System, reasonable time for repairs, and the low probability of a DBA occurring during this period.

(continued)

BASES

ACTIONS (continued)

B.1 and B2

If the inoperable containment spray train cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 with RCS pressure < 385 psia within 84 hours. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging plant systems. The extended interval to reach MODE 4 with RCS pressure < 385 psia allows additional time for the restoration of the containment spray train and is reasonable when considering that the driving force for a release of radioactive material from the Reactor Coolant System is reduced in MODE 3.

C.1

With two containment spray trains inoperable, the unit is in a condition outside the accident analysis. Therefore, LCO 3.0.3 must be entered immediately.

SURVEILLANCE REQUIREMENTS

SR 3.6.6.1

Verifying the correct alignment for manual, power operated, and automatic valves in the containment spray flow path provides assurance that the proper flow paths will exist for Containment Spray System operation (positioned to take suction from the RWT on a containment spray actuation test signal [CSAS]). This SR does not apply to valves that are locked, sealed, or otherwise secured in position since these were verified to be in the correct position prior to being secured. This SR also does not apply to valves that cannot be inadvertently misaligned, such as check valves. This SR does not require any testing or valve manipulation. Rather, it involves verifying, through a system walkdown, that those valves outside containment and capable of potentially being mispositioned are in the correct position.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.6.2

Verifying that the containment spray header piping is full of water to the 113 ft level minimizes the time required to fill the header. This ensures that spray flow will be admitted to the containment atmosphere within the time frame assumed in the containment analysis. The analyses shows that the header may be filled with unborated water which helps to reduce boron plate out due to evaporation. The 31 day Frequency is based on the static nature of the fill header and the low probability of a significant degradation of water level in the piping occurring between surveillances. The value of 113' is an indicated value which accounts for instrument uncertainty.

SR 3.6.6.3

Verifying that each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head ensures that spray pump performance has not degraded during the cycle. Flow and differential pressure are normal tests of centrifugal pump performance required by Section XI of the ASME Code (Ref. 6). Since the containment spray pumps cannot be tested with flow through the spray headers, they are tested on recirculation flow (either full flow or miniflow as conditions permit). This test is indicative of overall performance. Such inservice inspections confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. The Frequency of this SR is in accordance with the Inservice Testing Program.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.6.4 and SR 3.6.6.5 (continued)

These SRs verify that each automatic containment spray valve actuates to its correct position and that each containment spray pump starts upon receipt of an actual or simulated safety injection actuation signal, recirculation actuation signal and containment spray actuation signal as applicable. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The 18 month Frequency is based on the need to perform these Surveillances under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillances were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillances when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

The surveillance of containment sump isolation valves is also required by SR 3.5.3.5. A single surveillance may be used to satisfy both requirements.

SR 3.6.6.6

With the containment spray inlet valves closed and the spray header drained of any solution, low pressure air or smoke can be blown through test connections. Performance of this SR demonstrates that each spray nozzle is unobstructed and provides assurance that spray coverage of the containment during an accident is not degraded. Due to the passive design of the nozzle, a test at 10 year intervals is considered adequate to detect obstruction of the spray nozzles.

(continued)

BASES

REFERENCES

1. 10 CFR 50, Appendix A, GDC 38, GDC 39, GDC 40, GDC 41, GDC 42, and GDC 43.
2. UFSAR, Section 6.2.
3. UFSAR, Section 6.5.
4. UFSAR, Section 7.3.
5. UFSAR, Section 3.1.34
6. ASME, Boiler and Pressure Vessel Code, Section XI.
7. 10 CFR 50.44.
8. Regulatory Guide 1.7, Revision 0.

B 3.6 CONTAINMENT SYSTEMS

B 3.6.7 Hydrogen Recombiners

BASES

BACKGROUND

The function of the hydrogen recombiners is to eliminate the potential breach of containment due to a hydrogen oxygen reaction. Per 10 CFR 50.44, "Standards for Combustible Gas Control Systems in Light-Water-Cooled Reactors" (Ref. 1), and 10 CFR 50, GDC 41, "Containment Atmosphere Cleanup" (Ref. 2), hydrogen recombiners are required to reduce the hydrogen concentration in the containment following a Loss Of Coolant Accident (LOCA) or Main Steam Line Break (MSLB). The recombiners accomplish this by recombining hydrogen and oxygen to form water vapor. The vapor remains in containment, thus eliminating any discharge to the environment. The hydrogen recombiners are manually initiated since flammability limits would not be reached until several days after a Design Basis Accident (DBA).

Two 100% capacity independent hydrogen recombiners are shared among the three units. Each consists of controls, a power supply, and a recombiner located in the Auxiliary Building. Recombination is accomplished by heating a hydrogen air mixture above 1150°F. The resulting water vapor and discharge gases are cooled prior to discharge from the recombiner. Air flows through the unit at 50 cfm with a 5 hp centrifugal blower in the unit providing the motive force. A single recombiner is capable of maintaining the hydrogen concentration in containment below the 4.0 volume percent (v/o) flammability limit. Two recombiners are provided to meet the requirement for redundancy and independence. Each recombiner is powered from a separate Engineered Safety Features bus.

APPLICABLE SAFETY ANALYSES

The hydrogen recombiners provide for controlling the bulk hydrogen concentration in containment to less than the lower flammable concentration of 4.0 v/o following a DBA. This control would prevent a containment wide hydrogen burn, thus ensuring the pressure and temperature assumed in the analysis are not exceeded and minimizing damage to safety

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

related equipment located in containment. The limiting DBA relative to hydrogen generation is a LOCA.

Hydrogen may accumulate within containment following a LOCA as a result of:

a. A metal steam reaction between the zirconium fuel rod cladding and the reactor coolant;

b. Radiolytic decomposition of water in the Reactor Coolant System (RCS) and the containment sump;

c. Hydrogen in the RCS at the time of the LOCA (i.e., hydrogen dissolved in the reactor coolant and hydrogen gas in the pressurizer vapor space); or

d. Corrosion of metals exposed to Containment Spray System and Emergency Core Cooling Systems solutions.

To evaluate the potential for hydrogen accumulation in containment following a LOCA, the hydrogen generation as a function of time following the initiation of the accident is calculated. Conservative assumptions recommended in Reference 3 are used to maximize the amount of hydrogen calculated.

The hydrogen recombiners satisfy Criterion 3 of 10 CFR 50.36 (c)(2)(ii).

LCO

Two hydrogen recombiners shared amoung the three units must be OPERABLE. This ensures operation of at least one hydrogen recombiner in the event of a worst case single active failure.

Operation with at least one hydrogen recombiner ensures that the post LOCA hydrogen concentration can be prevented from exceeding the flammability limit.

APPLICABILITY

In MODES 1 and 2, two hydrogen recombiners are required to control the post LOCA hydrogen concentration within containment below its flammability limit of 4.0 v/o, assuming a worst case single failure.

(continued)

BASES

APPLICABILITY (continued)

In MODES 3 and 4, both the hydrogen production rate and the total hydrogen produced after a LOCA would be less than that calculated for the DBA LOCA. Also, because of the limited time in these MODES, the probability of an accident requiring the hydrogen recombiners is low. Therefore, the hydrogen recombiners are not required in MODE 3 or 4.

In MODES 5 and 6, the probability and consequences of a LOCA are low, due to the pressure and temperature limitations. Therefore, hydrogen recombiners are not required in these MODES.

ACTIONS

A.1

With one containment hydrogen recombiner inoperable, the inoperable recombiner must be restored to OPERABLE status within 30 days. In this condition, the remaining OPERABLE hydrogen recombiner is adequate to perform the hydrogen control function. The 30 day Completion Time is based on the availability of the other hydrogen recombiner, the small probability of a LOCA or MSLB occurring (that would generate an amount of hydrogen that exceeds the flammability limit), and the amount of time available after a LOCA or MSLB (should one occur) for operator action to prevent hydrogen accumulation from exceeding the flammability limit.

Required Action A.1 has been modified by a Note stating that the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when one hydrogen recombiner is inoperable. This allowance is based on the availability of the other hydrogen recombiner, the small probability of a LOCA or MSLB occurring (that would generate an amount of hydrogen that exceeds the flammability limit), and the amount of time available after a LOCA or MSLB (should one occur) for operator action to prevent hydrogen accumulation from exceeding the flammability limit.

(continued)

BASES

ACTIONS (continued)

B.1 and B.2

With two hydrogen recombiners inoperable, the ability to perform the hydrogen control function via alternate capabilities must be verified by administrative means within 1 hour. The alternate hydrogen control capabilities are provided by the Hydrogen Purge Cleanup System. The 1 hour Completion Time allows a reasonable period of time to verify that a loss of hydrogen control function does not exist. In addition, the alternate hydrogen control system capability must be verified every 12 hours thereafter to ensure its continued availability. Both the initial verification and all subsequent verifications may be performed as an administrative check, by examining logs or other information to determine the availability of the alternate hydrogen control system. It does not mean to perform the Surveillances needed to demonstrate OPERABILITY of the alternate hydrogen control system. If the ability to perform the hydrogen control function is maintained, continued operation is permitted with two hydrogen recombiners inoperable for up to 7 days. Seven days is a reasonable time to allow two hydrogen recombiners to be inoperable because the hydrogen control function is maintained and because of the low probability of the occurrence of a LOCA that would generate hydrogen in amounts capable of exceeding the flammability limit.

C.1

If the inoperable hydrogen recombiner(s) cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging plant systems.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.7.1

This SR ensures that there are no physical problems that could affect recombiner operation. A visual inspection is sufficient to determine abnormal conditions that could cause failures. The 6 month Frequency for this SR was developed considering that the incidence of hydrogen recombiners failing the SR in the past is low.

SR 3.6.7.2

A functional test of each Hydrogen Recombiner System assures that the recombiners remain operational. The functional test shall include operating the recombiner including the air blast heat exchanger fan motor and enclosed blower motor continuously for at least 30 minutes at a temperature of approximately 800°F reaction chamber temperature. The frequency recommended for this surveillance in the Improved Standard Technical Specifications (NUREG-1432, Rev. 1) is 18 months. The bases for NUREG 1432 was developed for permanently installed hydrogen recombiners. The two portable hydrogen recombiners at PVNGS are shared among the three units; therefore, the 6 month frequency from the initial licensing basis is retained for reliability considerations.

SR 3.6.7.3

Performance of a CHANNEL CALIBRATION for each hydrogen recombiner ensures that the recombiners are operational and can attain and sustain the temperature necessary for hydrogen recombination. In particular, this SR requires 1) resistance checks of motors, thermocouples, and heater systems, 2) testing/calibration of all flow elements, switches, and temperature elements, and 3) operation of the recombiner to include a functional test at 1200°F (±50°F) for at least 4 hours. Operating experience has shown that these components usually pass the Surveillance when performed at the 12 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

REFERENCES

1. 10 CFR 50.44.
2. 10 CFR 50, Appendix A, GDC 41.
3. Regulatory Guide 1.7, Revision 0.
4. UFSAR, Section 6.2.5

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3.6 CONTAINMENT SYSTEMS

3.6.1 Containment ~~(Atmospheric and Dual)~~

<3.6.1.1> LCO 3.6.1 Containment shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.6.1.1ACT> <3.6.1.2ACT>	A. Containment inoperable.	A.1 Restore containment to OPERABLE status.	1 hour
<3.6.1.1ACT> <3.6.1.2ACT>	B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 5.	6 hours 36 hours

<DOC>
<CTS>

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
<4.6.1.2> <DOC A.8> SR 3.6.1.1	Perform required visual examinations and leakage rate testing except for containment air lock testing, in accordance with ~~10 CFR 50, Appendix J, as modified by approved exemptions.~~ the Containment Leakage Rate Testing Program ~~The leakage rate acceptance criterion is ≤ 1.0 L_a. However, during the first unit startup following testing performed in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions, the leakage rate acceptance criteria are < 0.6 L_a for the Type B and Type C tests, and < 0.75 L_a for the Type A test.~~	~~NOTE SR 3.0.2 is not applicable~~ In accordance with ~~10 CFR 50, Appendix J, as modified by approved exemptions~~ the Containment Leakage Rate Testing Program. ③
<4.6.1.6.1> SR 3.6.1.2	Verify containment structural integrity in accordance with the Containment Tendon Surveillance Program.	In accordance with the Containment Tendon Surveillance Program

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.6.1
BASES MARK UP

B 3.6 CONTAINMENT SYSTEMS

B 3.6.1 Containment (Atmospheric)

BASES

Containment 2

BACKGROUND

CB

3

Loss of Coolant

The containment consists of the concrete ~~reactor~~ building (~~RB~~), its steel liner, and the penetrations through this structure. The structure is designed to contain radioactive material that may be released from the reactor core following a Design Basis Accident (~~DBA~~). Additionally, this structure provides shielding from the fission products that may be present in the containment atmosphere following accident conditions.

two way pattern of tendons, which are an extension of the continuous vertical tendons.

The containment is a reinforced concrete structure with a cylindrical wall, a flat foundation mat, and a shallow dome roof. ~~For containments with ungrouted tendons,~~ the cylinder wall is prestressed with a post tensioning system in the vertical and horizontal directions, and the dome roof is prestressed utilizing a ~~three way post tensioning system~~. The inside surface of the containment is lined with a carbon steel liner to ensure a high degree of leak tightness during operating and accident conditions. 2

CB

Design Basis Accident

3

The concrete ~~RB~~ is required for structural integrity of the containment under (DBA) conditions. The steel liner and its penetrations establish the leakage limiting boundary of the containment. Maintaining the containment OPERABLE limits the leakage of fission product radioactivity from the containment to the environment. SR 3.6.1.1 leakage rate requirements comply with 10 CFR 50, Appendix J, (Ref. 1), as modified by approved exemptions. 3

, Option B

The isolation devices for the penetrations in the containment boundary are a part of the containment leak tight barrier. To maintain this leak tight barrier:

a. All penetrations required to be closed during accident conditions are either:

   1. capable of being closed by an OPERABLE automatic containment isolation system, or

(continued)

BASES

BACKGROUND (continued)

2. closed by manual valves, blind flanges, or de-activated automatic valves secured in their closed positions, except as provided in LCO 3.6.3, "Containment Isolation Valves";

b. Each air lock is OPERABLE, except as provided in LCO 3.6.2, "Containment Air Locks"; and 1

c. All equipment hatches are closed~~; and~~.

~~[d. The pressurized sealing mechanism associated with a penetration, except as provided in LCO 3.6.[ ], is OPERABLE.]~~

APPLICABLE SAFETY ANALYSES

The safety design basis for the containment is that the containment must withstand the pressures and temperatures of the limiting DBA without exceeding the design leakage rate. 2

The DBAs that result in a release of radioactive material within containment are a ~~loss of coolant accident~~ (LOCA), a feedwater line break, ~~a main steam line break (MSLB),~~ and a control element assembly ejection accident (Ref. 2). In the analysis of each of these accidents, it is assumed that containment is OPERABLE such that release of fission products to the environment is controlled by the rate of containment leakage. The containment was designed with an allowable leakage rate of ~~[0.10]% of containment air weight~~ 0.1% of containment air mass per day (Ref. 3). This leakage rate is defined in 10 CFR 50, Appendix J, Option B (Ref. 1), as L_a: the maximum allowable containment leakage rate at the calculated maximum peak containment pressure (P_a) of ~~[55.7]~~ 52.0 psig, which results from the limiting ~~DBA, which is a design basis~~ ~~MSLB~~ LOCA (Ref. 2). 3 4

Satisfactory leakage rate test results are a requirement for the establishment of containment OPERABILITY.

The containment satisfies Criterion 3 of ~~the NRC Policy Statement~~ 10CFR50.36(c)(2)(ii). 1

LCO

Containment OPERABILITY is maintained by limiting leakage to ≤ 1.0 L_a, except prior to the first startup after performing a required ~~10 CFR 50, Appendix J,~~ Containment Leakage Rate Testing Program leakage test. At this 3

(continued)

the applicable leakage limits must be met.

3

BASES

LCO (continued)

1

Type A leakage rate testing measures the overall leakage rate of the containment. Type B leakage rate testing measures the local leakage rate of blind flanges, air locks and other devices which employ resilient seals. Type C leakage rate testing measures the local leakage rate of valves. Refer to reference. 1 for a more detailed definition.

time, ~~the combined Type B and C leakage must be < 0.6 L_a, and the overall Type A leakage must be < 0.75 L_a.~~

Compliance with this LCO will ensure a containment configuration, including equipment hatches, that is structurally sound and that will limit leakage to those leakage rates assumed in the safety analysis.

Individual leakage rates specified for the containment air lock (LCO 3.6.2) *and purge valves with resilient seals (LCO 3.6.3)* are not specifically part of the acceptance criteria of 10 CFR 50, Appendix J. Option B Therefore, leakage rates exceeding these individual limits only result in the containment being inoperable when the leakage results in exceeding the overall acceptance criteria of ~~Appendix J~~ 1.0 La

3

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material into containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, containment is not required to be OPERABLE in MODE 5 to prevent leakage of radioactive material from containment. The requirements for containment during MODE 6 are addressed in LCO 3.9.3, "Containment Penetrations."

ACTIONS

A.1

In the event containment is inoperable, containment must be restored to OPERABLE status within 1 hour. The 1 hour Completion Time provides a period of time to correct the problem commensurate with the importance of maintaining containment during MODES 1, 2, 3, and 4. This time period also ensures that the probability of an accident (requiring containment OPERABILITY) occurring during periods when containment is inoperable is minimal.

B.1 and B.2

If containment cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a

(continued)

BASES

ACTIONS

B.1 and B.2 (continued)

MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.1.1

the Containment Leakage Rate Testing Program.

following an outage or shutdown that included Type B and C testing only

following an outage or shutdown that included Type A testing

the Containment Leakage Rate Testing Program

Maintaining the containment OPERABLE requires compliance with the visual examinations and leakage rate test requirements of ~~10 CFR 50, Appendix J (Ref. 1), as modified by approved exemptions.~~ Failure to meet air lock and purge valve with resilient seal leakage limits specified in LCO 3.6.2 and LCO 3.6.3 does not invalidate the acceptability of these overall leakage determinations unless their contribution to overall Type A, B, and C leakage causes that to exceed limits. As left leakage prior to the first startup after performing a required ~~10 CFR 50, Appendix J~~ leakage test is required to be < 0.6 L_a for combined Type B and C leakage, and < 0.75 L_a for overall Type A leakage. At all other times between required leakage rate tests, the acceptance criteria is based on an overall Type A leakage limit of ≤ 1.0 L_a. At ≤ 1.0 L_a the offsite dose consequences are bounded by the assumptions of the safety analysis. SR Frequencies are as required by ~~Appendix J, as modified by approved exemptions. Thus SR 3.0.2 (which allows Frequency extensions) does not apply.~~ These periodic testing requirements verify that the containment leakage rate does not exceed the leakage rate assumed in the safety analysis. (3) (3)

SR 3.6.1.2

For ungrouted, post tensioned tendons, this SR ensures that the structural integrity of the containment will be maintained in accordance with the provisions of the Containment Tendon Surveillance Program. Testing and Frequency are consistent with the recommendations of Regulatory Guide 1.35 (Ref. 4).

(continued)

BASES (continued)

REFERENCES

1. 10 CFR 50, Appendix J. , Option B
2. ~~FSAR~~, Section ~~[ ]~~. 3.8
3. ~~FSAR~~, Section ~~[ ]~~. 6.2
4. Regulatory Guide 1.35, Revision ~~[1]~~. 1 and Draft of Revision 3.

UFSAR

NUREG-1432 EXCEPTIONS
SPECIFICATION 3.6.1

1. Grammar and/or editorial changes have been made to enhance clarity. No technical or intent changes to the Specification are made by this change.

2. The plant specific titles, nomenclature, number, parameter/value, reference, system description, system design, operating practices or analysis description was used (additions, deletions, and/or changes are included). Plant specific parameters/values were directly transferred from the CTS to the ITS.

3. NUREG 1432 SR 3.6.1.1 contains details of leakage rate testing. These details have either been moved to ITS 5.0, the Containment Leakage Rate Testing Program, or the Bases. Relocation of these details will allow control of changes in accordance with 10CFR50.59. The details of leakage rate testing required by 10CFR50, Appendix J are required by law and cannot be modified by the licensee without obtaining exemption. There is no reduction in the level of safety resulting from these changes since the requirements still exist in other documents and programs. These changes provide an appropriate measure of regulatory control and reduce the NRC and PVNGS resources required to process future changes. These changes are consistent with the NRC guidelines for implementation of 10CFR50, Appendix J, Option B.

4. The maximum peak containment internal pressure, Pa, has been changed to 52.0 psig to agree with the requirements contained within the Containment Leak Testing Program of ITS 5.0. The Discussion of Changes (DOC) for ITS 5.0 contains additional justification for this change.

PVNGS CTS
SPECIFICATION 3.6.1
MARK UP

Specification 3.6.1
(3.6.1 / 3.6.3)

A.1

3.6 ~~3/4.6~~ CONTAINMENT SYSTEMS

~~3/4.6.1 PRIMARY CONTAINMENT~~

3.6.1 CONTAINMENT ~~INTEGRITY~~

~~LIMITING CONDITION FOR OPERATION~~

LCO3.6.1 ~~3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained.~~

APPLICABILITY: MODES 1, 2, 3, and 4. Containment shall be OPERABLE. A.2

ACTION:

ACT A. With~~out primary~~ CONTAINMENT ~~INTEGRITY~~ inoperable, restore CONTAINMENT ~~INTEGRITY~~ OPERABILITY within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
ACT B.

ITS 3.6.1
ITS 3.6.3 SURVEILLANCE REQUIREMENTS

4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated:

a. At least once per 31 days by verifying that all penetrations* not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions except for valves that are open under administrative control as permitted by Specification 3.6.3. ITS 3.6.3

ITS 3.6.1

~~b. By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3.~~ A.7

~~c. After each closing of each penetration subject to Type B testing, except containment air locks, if opened following a Type A or B test, by leak rate testing in accordance with the Containment Leakage Rate Testing Program.~~ LA.1

ITS 3.6.1
ITS 3.6.3 *Except valves, blind flanges, and deactivated automatic valves which are located inside the containment and are locked, sealed, or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than once per 92 days.

Specification 3.6.1

A.1

3.6 CONTAINMENT SYSTEMS

3.6.1 CONTAINMENT LEAKAGE

LIMITING CONDITION FOR OPERATION

3.6.1.2 Containment leakage rates shall in accordance with the Containment Leakage Rate Testing Program. A.3

APPLICABILITY: MODES 1, 2, 3, and 4.

A.2

ACTION:

inoperable OPERABILITY

ACT A. With containment ~~leakage rates not within limits~~, restore containment ~~leakage rates to within limits~~ within 1 hour, or be in at least HOT STANDBY within the
ACT B. next 6 hours, and at least COLD SHUTDOWN within the following 30 hours.

A.6 Perform required visual examinations and   except for containment air lock testing A.4

SURVEILLANCE REQUIREMENTS

SR3.6.1.1 4.6.1.2 The containment leakage rates ~~shall be determined~~ testing in accordance with the Containment Leakage Rate Testing Program. The provisions of Specification 4.0.2 are not applicable. A.8

Specification 3.6.1
(3.6.1/5.0)

3.6 CONTAINMENT SYSTEMS

3.6.1 CONTAINMENT ~~VESSEL STRUCTURAL INTEGRITY~~

CTS 3.6.1.6 has been moved to ITS 5.0 Ref ITS 5.0 DOC for discussion

~~LIMITING CONDITION FOR OPERATION~~

ITS 5.0

3.6.1.6 The structural integrity of the containment vessel shall be maintained at a level consistent with the acceptance criteria in Specification 4.6.1.6.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

a. With the structural integrity at a level below the acceptance criteria of Specification 4.6.1.6 except for Specification 4.6.1.6.2a.4), restore the containment vessel to the required level of integrity within 15 days, perform an engineering evaluation of the containment vessel structural integrity and provide a Special Report to the Commission within 30 days in accordance with Specification 6.9.2; or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With the structural integrity at a level below the acceptance criteria of Specification 4.6.1.6.2a.4), restore the containment vessel to the required level of integrity within 72 hours, perform an engineering evaluation of the containment vessel structural integrity and provide a Special Report to the Commission within 15 days in accordance with Specification 6.9.2; or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ITS 5.0

ITS 3.6.1

SURVEILLANCE REQUIREMENTS

SR 3.6.1.2 ~~4.6.1.6.1~~ The structural integrity of the containment vessel shall be demonstrated ~~at the end of 1, 3 and 5 years following the initial containment vessel structural~~ integrity test and at 5-year intervals thereafter. All of the

ITS 5.0

acceptance testing of tendon and visual examinations of end anchorages, adjacent concrete surfaces and containment vessel surfaces shall be performed sequentially and within the same time frame.

4.6.1.6.2 The structural integrity of the tendons shall be demonstrated by:

a. Determining from a random but representative sample of at least 10 tendons (6 hoop and 4 inverted U) that each group (hoop, and inverted U) has an observed lift-off force within the predicted limits for that group. For each subsequent inspection one tendon from each group shall be kept unchanged to develop a history and to correlate the observed data. The procedure of inspection and the tendon acceptance criteria shall be as follows:

A.5

In accordance with the Containment Tendon Surveillance Program

CTS 4.6.1.6 Surveillance Requirements have been moved to ITS 5.0. Ref ITS 5.0 DOC for discussion

DISCUSSION OF CHANGES
SPECIFICATION 3.6.1

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering is in accordance with the Combustion Engineering Plant (CEOG) Standard Technical Specifications NUREG-1432, Rev. 1 (NUREG-1432). As a result, the Palo Verde Nuclear Generating Station (PVNGS) Improved Technical Specifications (ITS) should be more readable, and therefore understandable, by plant operators as well as other users. During the reformatting and renumbering of the ITS, no technical changes (either actual or interpretational) to the Current Technical Specification (CTS) were made unless they were identified and justified.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During NUREG-1432 development, certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or interpretational) to the CTS.

Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more detail does not result in a technical change.

A.2 CTS 3.6.1.1 states, "Primary CONTAINMENT INTEGRITY shall be maintained." CTS 3.6.1.2 states, "Containment leakage rates shall (sic) in accordance with the Containment Leakage Rate Testing Program." CTS 3.6.1.6 states, "The structural integrity of the containment vessel shall be maintained at a level consistent with the acceptance criteria in Specification 4.6.1.6." ITS LCO 3.6.1 states, "Containment shall be OPERABLE." The requirements of CTS 3/4.6.1.1, CTS 3/4.6.1.2, and 3/4.6.1.6 contain the requirements for containment isolation, containment leakage, and containment structural integrity respectively. These three factors are required for containment to perform its safety function. ITS LCO 3.6.1 combines these requirements into one Specification which requires that containment be Operable. Combining these requirements in a single Specification for containment OPERABILITY does not impact safety. This change is consistent with NUREG-1432.

A.3 CTS 3.6.1.2 states, "Containment leakage rates shall (sic) in accordance with the Containment Leakage Rate Testing Program." As discussed in DOC A.2, CTS 3/4.6.1.1, CTS 3/4.6.1.2, and CTS 3/4.6.1.6 have been combined into ITS 3.6.1. Specifying the containment leakage rate requirements as part of overall containment OPERABILITY does not impact safety. This change is consistent with NUREG-1432.

ADMINISTRATIVE CHANGES

A.4 CTS 4.6.1.2 states in part, "The containment leakage rates shall be determined in accordance with the Containment Leakage Rate Testing Program..." ITS SR 3.6.1.1 states in part, "Perform required visual examinations and leakage rate testing except for containment air lock testing, in accordance with the Containment Leakage Rate Testing Program." The requirements for containment air lock leakage rate testing are contained in CTS 3/4.6.1.3 and ITS 3.6.2. Excluding air lock leakage rate testing from the Surveillance for leakage rate testing of other containment penetrations and the overall containment is acceptable since the Required Actions contained in the air lock Specifications are adequate to ensure safe operation. See DOC L.1 for additional discussion. This change does not impact safety and is consistent with NUREG-1432.

A.5 CTS 4.6.1.6.1 contains the Surveillances necessary to verify the structural integrity of the containment vessel is not degraded. These requirements have been moved to ITS 5.0 (the Containment Tendon Surveillance Program). ITS SR 3.6.1.2 requires that these Surveillances be performed in accordance with the Containment Tendon Surveillance Program as part of the verification of overall containment OPERABILITY. Moving the SRs to a TS controlled program and then referencing that program in the appropriate Specification does not impact safety. See DOCs for ITS 5.0 for additional discussion. This change is consistent with NUREG-1432.

A.6 CTS 4.6.1.2 states in part, "The containment leakage rates shall be determined in accordance with the Containment Leakage Rate Testing Program..." ITS SR 3.6.1.1 states in part, "Perform required visual examinations and leakage rate testing except for containment air lock testing, in accordance with the Containment Leakage Rate Testing Program." CTS 4.6.1.2 does not explicitly state the requirement to perform periodic visual examinations of the containment. Periodic visual examinations are required by 10CFR50, Appendix J. These requirements are controlled by the Containment Leakage Rate Testing Program. Adding a reference to a Surveillance which is already required by 10CFR50 and TS programs does not impact safety. This change is consistent with NUREG-1432.

A.7 SR 4.6.1.1.b states, "Primary CONTAINMENT INTEGRITY shall be demonstrated by verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3." This statement is not included in ITS 3.6.1. ITS format typically does not include references to other Specifications. The requirements for air lock Operability are included in ITS 3.6.2. Removal of this reference does not relieve the requirement to comply with the air lock Specification. Any changes to the air lock Specifications are discussed in in Section 3.6.2. This change does not impact safety and is consistent with NUREG-1432.

A.8 CTS 4.6.1.2 states in part, "The provisions of Specification 4.0.2 are not applicable." ITS SR 3.6.1.1 does not contain this exemption. CTS 4.0.2 allows the Surveillance intervals to be extended a maximum of 25% from the specified Surveillance interval. Since testing intervals are specified by regulation, the extension does not apply as stated in ITS SR 3.0.2 Bases. This is an administrative change since removal of the note does not result in relaxation of any requirements in the application of the Containment Leakage Rate Testing Program. This change does not impact safety and is consistent with the guidance provided by the NRC for incorporation of 10CFR50, Appendix J, Option B in the Improved Technical Specifications.

TECHNICAL CHANGES - MORE RESTRICTIVE

None

TECHNICAL CHANGES - RELOCATIONS

LA.1 CTS 4.6.1.1.c states, "After each closing of each penetration subject to Type B testing, except containment air locks, if opened following a Type A or B test, by leak rate testing in accordance with the Containment Leakage Rate Testing Program." The requirement to test Type B penetrations as detailed in CTS 4.6.1.1.c is a requirement of 10CFR50, Appendix J. These requirements are relocated to the Containment Leakage Rate Testing Program which in turn is required by ITS 5.0. Relocation of these requirements does not affect the performance or Frequency of testing. Changes to the Program will be controlled in accordance with 10CFR50.59 and 10CFR50, Appendix J.

This provides an equivalent level of control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement is acceptable and is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE

L.1 NOT USED

NO SIGNIFICANT HAZARDS CONSIDERATION
SPECIFICATION 3.6.1

ADMINISTRATIVE CHANGES
(ITS 3.6.1 Discussion of Changes Labeled A.1, A.2, A.3, A.4, A.5, A.6, A.7 and A.8)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, is converting to the ITS as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." The proposed changes involve the reformatting, renumbering, rewording of the Technical Specifications (TS) and Bases with no change in intent, and the incorporation of current operating practices consistent with NUREG-1432. These changes, since they do not involve technical changes to the Current TS (CTS), are administrative. Below are the No Significant Hazards Consideration (NSHC) for the conversion of this Section/Chapter to NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

> The proposed changes involve reformatting, renumbering, and rewording of the CTS and Bases along with incorporation of PVNGS current operating practices and other changes to the CTS as discussed in the specific Discussion of Changes listed above in order to be consistent with NUREG-1432. The reformatting, renumbering, and rewording along with the other changes listed above, involves no technical changes to the CTS. Specifically, there will be no change in the requirements imposed on PVNGS due to these changes. During development of NUREG-1432, certain wording preferences or English language conventions were adopted. The proposed changes to this Section/Chapter are administrative in nature and do not impact initiators of any analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ADMINISTRATIVE CHANGES
(ITS 3.6.1 Discussion of Changes Labeled A.1, A.2, A.3, A.4, A.5, A.6, A.7 and A.8) (continued)

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

> The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or change the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

> The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes are administrative in nature and will not involve any technical changes. The proposed changes will not reduce a margin of safety because they have no impact on any safety analysis assumptions. Also, because these changes are administrative in nature, no question of safety is involved. Therefore, these changes do not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.6.1 Discussion of Changes Labeled LA.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed changes, since detail is being removed from the CTS to a Licensee Controlled Document, are less restrictive. The descriptions of these changes are in the Discussion of Changes listed above.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

> The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes do not result in any hardware changes or changes to plant operating practices. The details being relocated are not assumed to be an initiator of any analyzed event. The Licensee Controlled Document containing the relocated requirements will be maintained using the provisions of 10 CFR 50.59 or other specified control processes and is subject to the change control process in the Administrative Controls Section of the ITS. Since any changes to a Licensee Controlled Document will be evaluated, no increase in the probability or consequences of an accident previously evaluated will be allowed. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.6.1 Discussion of Changes Labeled LA.1) (continued)

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes will not impose different requirements and adequate control of information will still be maintained. These changes will not alter assumptions made in the safety analysis or licensing basis. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not reduce a margin of safety since they have no impact on any safety analysis assumptions. In addition, the requirements to be transposed from the CTS to the Licensee Controlled Document are the same as the CTS. Since any future changes to this Licensee Controlled Document will be evaluated per the requirements of 10 CFR 50.59, or other specified control processes, no reduction (significant or insignificant) in a margin of safety will be allowed. Therefore, these changes will not involve a significant reduction in a margin of safety.

The NRC review provides a certain margin of safety, and although this review will no longer be performed prior to submittal, the NRC still inspects the 10 CFR 50.59 process. The proposed changes are consistent with NUREG-1432, which was approved by the NRC Staff. The change controls for proposed relocated details and requirements provide an acceptable level of regulatory authority. Revising the CTS to reflect the approved level of detail per NUREG-1432 reinforces the conclusion that there is not a significant reduction in the margin of safety. Therefore, revising the CTS to reflect the NRC accepted level of detail and requirements ensures no reduction in a margin of safety.

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.6.2
MARK UP

<DOC>
<CTS> 3.6 CONTAINMENT SYSTEMS

3.6.2 Containment Air Locks ~~(Atmospheric and Dual)~~

<3.6.1.3> LCO 3.6.2 [Two] containment air lock[s] shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

-----------------------------------NOTES-----------------------------------

<DOC L.2> 1. Entry and exit is permissible to perform repairs on the affected air lock components.

<DOC A.5> 2. Separate Condition entry is allowed for each air lock.

<DOC A.6> 3. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when leakage results in exceeding the overall containment leakage rate acceptance criteria.

CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.6.1.3 ACT a.1> <DOC A.7> A. One or more containment air locks with one containment air lock door inoperable.	------------NOTES------------ 1. Required Actions A.1, A.2, and A.3 are not applicable if both doors in the same air lock are inoperable and Condition C is entered. <DOC L.2> 2. Entry and exit is permissible for 7 days under administrative controls [if both air locks are inoperable]. -----------------------------	
		(continued)

<DOC>
<CTS>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<DOC M.1> A. (continued)	A.1 Verify the OPERABLE door is closed in the affected air lock.	1 hour
	AND	
	A.2 Lock the OPERABLE door closed in the affected air lock.	24 hours
	AND	
<DOC L.3>	A.3 ---------NOTE--------- Air lock doors in high radiation areas may be verified locked closed by administrative means. --------------------	
	Verify the OPERABLE door is locked closed in the affected air lock.	Once per 31 days
<DOC L.4> B. One or more containment air locks with containment air lock interlock mechanism inoperable. <DOC A.8> <DOC L.4>	------------NOTES------------ 1. Required Actions B.1, B.2, and B.3 are not applicable if both doors in the same air lock are inoperable and Condition C is entered. 2. Entry and exit of containment is permissible under the control of a dedicated individual. ----------------------------	
		(continued)

<DOC>
<CTS>

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. (continued)	B.1	Verify an OPERABLE door is closed in the affected air lock.	1 hour
	AND		
	B.2	Lock an OPERABLE door closed in the affected air lock.	24 hours
	AND		
<DOC L.3>	B.3	---------NOTE--------- Air lock doors in high radiation areas may be verified locked closed by administrative means. ---------------------	
		Verify an OPERABLE door is locked closed in the affected air lock.	Once per 31 days
<3.6.1.3 Act b> <DOC A.6> C. One or more containment air locks inoperable for reasons other than Condition A or B.	C.1	Initiate action to evaluate overall containment leakage rate per LCO 3.6.1.	Immediately
	AND		
<DOC M.1>	C.2	Verify a door is closed in the affected air lock.	1 hour
	AND		
	C.3	Restore air lock to OPERABLE status.	24 hours

(continued)

<DOC>
<CTS>

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
<3.6.1.3 ACT a> <3.6.1.3 ACT b> D. Required Action and associated Completion Time not met.	D.1	Be in MODE 3.	6 hours
	AND		
	D.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
<4.6.1.3.a> SR 3.6.2.1 <DOC A.9> <DOC A.6>	---NOTES--- 1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. 2. Results shall be evaluated against acceptance criteria ~~of SR 3.6.1.1 in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions.~~ applicable to SR 3.6.1.1. (3)	
<DOC A.10>	Perform required air lock leakage rate testing in accordance with ~~10 CFR 50, Appendix J, as modified by approved exemptions.~~ the Containment Leakage Rate Testing Program. (3) ~~The acceptance criteria for air lock testing are: a. Overall air lock leakage rate is ≤ [0.05 L_a] when tested at ≥ P_a. b. For each door, leakage rate is ≤ [.01 L_a] when tested at ≥ [10.0 psig].~~	~~---NOTE--- SR 3.0.2 is not applicable~~ In accordance with ~~10 CFR 50, Appendix J, as modified by approved exemptions~~ the Containment Leakage Rate Testing Program (3) ~~AND~~ (9) Following each closing as specified.

(continued)

<DOC>
<CTS>

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
<4.6.1.3.b> <DOC L.5> SR 3.6.2.2	~~-----NOTE----- Only required to be performed upon entry or exit through the containment air lock. -----~~ Verify only one door in the air lock can be opened at a time.	5 4 24 months ~~184 days~~

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.6.2
BASES MARK UP

B 3.6 CONTAINMENT SYSTEMS

B 3.6.2 Containment Air Locks (Atmospheric and Dual)

BASES

BACKGROUND

Containment air locks form part of the containment pressure boundary and provide a means for personnel access during all MODES of operation. (2)

Each air lock is nominally a right circular cylinder, ~~10~~ 9 ft in diameter, with a door at each end. The doors are interlocked to prevent simultaneous opening. During periods when containment is not required to be OPERABLE, the door interlock mechanism may be disabled, allowing both doors of an air lock to remain open for extended periods when frequent containment entry is necessary. Each air lock door has been designed and tested to certify its ability to withstand a pressure in excess of the maximum expected pressure following a Design Basis Accident (DBA) in containment. As such, closure of a single door supports containment OPERABILITY. Each of the doors contains double gasketed seals and local leakage rate testing capability to ensure pressure integrity. To effect a leak tight seal, the air lock design uses pressure seated doors (i.e., an increase in containment internal pressure results in increased sealing force on each door).

(6)

Each personnel air lock is provided with limit switches on both doors that provide ~~control room~~ local indication of door position. ~~Additionally, control room indication is provided to alert the operator whenever an air lock door interlock mechanism is defeated.~~ (2)

The containment air locks form part of the containment pressure boundary. As such, air lock integrity and leak tightness is essential for maintaining the containment leakage rate within limit in the event of a DBA. Not maintaining air lock integrity or leak tightness may result in a leakage rate in excess of that assumed in the unit safety analysis.

(continued)

BASES (continued)

APPLICABLE SAFETY ANALYSES

The

~~For atmospheric containment, the~~ DBAs that result in a release of radioactive material within containment are a loss of coolant accident (LOCA), a main steam line break (MSLB), and a control element assembly (CEA) ejection accident (Ref. 2). In the analysis of each of these accidents, it is assumed that containment is OPERABLE such that release of fission products to the environment is controlled by the rate of containment leakage. The containment was designed with an allowable leakage rate of [0.10]% of containment air ~~weight~~ per day (Ref. 3). ~~This leakage rate is defined in 10 CFR 50, Appendix J (Ref. 1), as L_a: the maximum allowable containment leakage rate at the calculated maximum peak containment pressure (P_a) of [55.7] psig, which results from the limiting DBA, which is a design basis MSLB (Ref. 2). This allowable leakage rate forms the basis for the acceptance criteria imposed on the SRs associated with the air lock.~~ (2) (3)

, a feedwater line break

mass

This leakage rate is defined in 10CFR50, Appendix J, Option B, as the maximum allowable containment leakage rate at the calculated peak containment internal pressure, Pa [52psig], following a design basis LOCA.

~~For dual containment, the DBAs that result in a release of radioactive material within containment are a LOCA, an MSLB, and a CEA ejection accident (Ref. 2). In the analysis of each of these accidents, it is assumed that containment is OPERABLE such that release of fission products to the environment is controlled by the rate of containment leakage. The containment was designed with an allowable leakage rate of [0.50]% of containment air weight per day (Ref. 3). This leakage rate is defined in 10 CFR 50, Appendix J (Ref. 1), as L_a: the maximum allowable containment leakage rate at the calculated maximum peak containment pressure (P_a) of [42.3] psig, which results from the limiting DBA, which is a 75% RTP MSLB (Ref. 2). This allowable leakage rate forms the basis for the acceptance criteria imposed on the SRs associated with the air lock.~~ (3)

The containment air locks satisfy Criterion 3 of ~~the NRC Policy Statement~~. 10CFR 50.36(c)(2)(ii) (1)

LCO

the pressure boundary (3)

Each containment air lock forms part of the containment pressure boundary. As part of containment, the air lock safety function is related to control of the containment leakage rate resulting from a DBA. Thus, each air lock's structural integrity and leak tightness are essential to the successful mitigation of such an event.

(continued)

BASES

LCO (continued)

Each air lock is required to be OPERABLE. For the air lock to be considered OPERABLE, the air lock interlock mechanism must be OPERABLE, the air lock must be in compliance with the Type B air lock leakage test, and both air lock doors must be OPERABLE. The interlock allows only one air lock door of an air lock to be opened at one time. This provision ensures that a gross breach of containment does not exist when containment is required to be OPERABLE. Closure of a single door in each air lock is sufficient to provide a leak tight barrier following postulated events. Nevertheless, both doors are kept closed when the air lock is not being used for normal entry into ~~and~~ or exit from containment. 3

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, the containment air locks are not required in MODE 5 to prevent leakage of radioactive material from containment. The requirements for the containment air locks during MODE 6 are addressed in LCO 3.9.3, "Containment Penetrations."

ACTIONS

The ACTIONS are modified by a Note that allows entry and exit to perform repairs on the affected air lock component. If the outer door is inoperable, then it may be easily accessed for most repairs. ~~It is preferred that the air lock be accessed from inside primary containment by entering through the other OPERABLE air lock. However, if this is not practicable,~~ If the inner door is inoperable, or if repairs on either door must be performed from the barrel side of the door then it is permissible to enter the air lock through the OPERABLE door, which means there is a short time during which the containment boundary is not intact (during access through the OPERABLE door). The ability to open the OPERABLE door, even if it means the containment boundary is temporarily not intact, is acceptable because of the low probability of an event that could pressurize the containment during the short time in which the OPERABLE door is expected to be open. After each entry and exit, the OPERABLE door must be 7

(continued)

BASES

ACTIONS (continued)

immediately closed. ~~If ALARA conditions permit, entry and exit should be via an OPERABLE air lock.~~ 7

A second Note has been added to provide clarification that, for this LCO, separate Condition entry is allowed for each air lock. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable air lock. Complying with the Required Actions may allow for continued operation, and a subsequent inoperable air lock is governed by subsequent Condition entry and application of associated Required Actions. A third Note has been included that requires entry into the applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when leakage results in exceeding the overall containment leakage limit.

A.1, A.2, and A.3

With one air lock door inoperable in one or more containment air locks, the OPERABLE door must be verified closed (Required Action A.1) in each affected containment air lock. This ensures that a leak tight containment barrier is maintained by the use of an OPERABLE air lock door. This action must be completed within 1 hour. This specified time period is consistent with the ACTIONS of LCO 3.6.1, which requires containment be restored to OPERABLE status within 1 hour. 2

Action A applies to any condition which affects only one side of the air lock such that closure of the opposite door maintains containment OPERABILITY. Examples of an inoperable air lock door are cracked viewglass, equalizing valve leaking, or door seals leaking.

In addition, the affected air lock penetration must be isolated by locking closed an OPERABLE air lock door within the 24 hour Completion Time. The 24 hour Completion Time is considered reasonable for locking the OPERABLE air lock door, considering the OPERABLE door of the affected air lock is being maintained closed.

Required Action A.3 verifies that an air lock with an inoperable door has been isolated by the use of a locked and closed OPERABLE air lock door. This ensures that an acceptable containment leakage boundary is maintained. The Completion Time of once per 31 days is based on engineering judgment and is considered adequate in view of the low likelihood of a locked door being mispositioned and other administrative controls. Required Action A.3 is modified by a Note that applies to air lock doors located in high radiation areas and allows these doors to be verified locked

(continued)

BASES

ACTIONS

A.1, A.2, and A.3 (continued)

closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of the door, once it has been verified to be in the proper position, is small.

The Required Actions have been modified by two Notes. Note 1 ensures that only the Required Actions and associated Completion Times of Condition C are required if both doors in the same air lock are inoperable. With both doors in the same air lock inoperable, an OPERABLE door is not available to be closed. Required Actions C.1 and C.2 are the appropriate remedial actions. The exception of Note 1 does not affect tracking the Completion Time from the initial entry into Condition A; only the requirement to comply with the Required Actions. Note 2 allows use of the air lock for entry and exit for 7 days under administrative controls if both air locks have an inoperable door. This 7 day restriction begins when the second air lock is discovered inoperable. Containment entry may be required to perform Technical Specifications (TS) Surveillances and Required Actions, as well as other activities on equipment inside containment that are required by TS or activities on equipment that support TS-required equipment. This Note is not intended to preclude performing other activities (i.e., non-TS-required activities) if the containment was entered, using the inoperable air lock, to perform an allowed activity listed above. This allowance is acceptable due to the low probability of an event that could pressurize the containment during the short time that the OPERABLE door is expected to be open.

B.1, B.2, and B.3

With an air lock interlock mechanism inoperable in one or more air locks, the Required Actions and associated Completion Times are consistent with those specified in Condition A.

The Required Actions have been modified by two Notes. Note 1 ensures that only the Required Actions and associated Completion Times of Condition C are required if both doors

(continued)

8

BASES

ACTIONS

Required Actions B.1, B.2, and B.3 are suspended while the air lock is under administrative control as allowed by Note 2.

B.1, B.2, and B.3 (continued)

in the same air lock are inoperable. With both doors in the same air lock inoperable, an OPERABLE door is not available to be closed. Required Actions C.1 and C.2 are the appropriate remedial actions. Note 2 allows entry into and exit from containment under the control of a dedicated individual stationed at the air lock to ensure that only one door is opened at a time (i.e., the individual performs the function of the interlock). This Note applies if Actions A, B, and C are entered concurrently. Inoperable interlocks do not cause the doors to be inoperable.

2

Required Action B.3 is modified by a Note that applies to air lock doors located in high radiation areas and allows these doors to be verified locked closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of the door, once it has been verified to be in the proper position, is small.

C.1, C.2, and C.3

With one or more air locks inoperable for reasons other than those described in Condition A or B, Required Action C.1 requires action to be initiated immediately to evaluate previous combined leakage rates using current air lock test results. An evaluation is acceptable since it is overly conservative to immediately declare the containment inoperable if both doors in an air lock have failed a seal test or if the overall air lock leakage is not within limits. In many instances (e.g., only one seal per door has failed), containment remains OPERABLE, yet only 1 hour (per LCO 3.6.1) would be provided to restore the air lock door to OPERABLE status prior to requiring a plant shutdown. In addition, even with both doors failing the seal test, the overall containment leakage rate can still be within limits.

Required Action C.2 requires that one door in the affected containment air lock must be verified to be closed. This action must be completed within the 1 hour Completion Time. This specified time period is consistent with the ACTIONS of LCO 3.6.1, which requires that containment be restored to OPERABLE status within 1 hour.

(continued)

BASES

ACTIONS

C.1, C.2, and C.3 (continued)

Additionally, the affected air lock(s) must be restored to OPERABLE status within the 24 hour Completion Time. The specified time period is considered reasonable for restoring an inoperable air lock to OPERABLE status, assuming that at least one door is maintained closed in each affected air lock.

D.1 and D.2

If the inoperable containment air lock cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.2.1

the Containment Leakage Rate Testing Program.

Maintaining containment air locks OPERABLE requires compliance with the leakage rate test requirements of ~~10 CFR 50, Appendix J (Ref. 1), as modified by approved exemptions.~~ This SR reflects the leakage rate testing requirements with regard to air lock leakage (Type B leakage tests). The acceptance criteria were established during initial air lock and containment OPERABILITY testing. The periodic testing requirements verify that the air lock leakage does not exceed the allowed fraction of the overall containment leakage rate. The Frequency is required by ~~Appendix J as modified by approved exemptions. Thus, SR 3.0.2 (which allows Frequency extensions) does not apply.~~ (3)

the Containment Leakage Rate Testing Program

The SR has been modified by two Notes. Note 1 states that an inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. This is considered reasonable since either air lock door is capable of providing a fission product barrier in the event of a DBA. Note 2 has been added to this SR requiring the results to be evaluated against the acceptance criteria ~~of~~

which is applicable to

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.2.1 (continued)

SR 3.6.1.1. This ensures that air lock leakage is properly accounted for in determining the overall containment leakage rate.

Used for entry and exit (procedures require strict adherence to single door opening)

SR 3.6.2.2

The air lock interlock is designed to prevent simultaneous opening of both doors in a single air lock. Since both the inner and outer doors of an air lock are designed to withstand the maximum expected post accident containment pressure, closure of either door will support containment OPERABILITY. Thus, the door interlock feature supports containment OPERABILITY while the air lock is being used for personnel transit into and out of containment. Periodic testing of this interlock demonstrates that the interlock will function as designed and that simultaneous opening of the inner and outer doors will not inadvertently occur. Due to the purely mechanical nature of this interlock, and given that the interlock mechanism is ~~only~~ not normally challenged when containment is ~~entered~~, this test is only required to be performed ~~upon entering containment, but is not required more frequently than every 184 days.~~ every 24 months. The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage, and the potential for loss of containment OPERABILITY if the Surveillance were performed with the reactor at power. The 24 month Frequency for the interlock is justified based on generic operating experience. The ~~184 day~~ Frequency is based on engineering judgment and is considered adequate ~~in view of other indications of door and interlock mechanism status available to operations personnel.~~ given that the interlock is not challenged during the use of the air lock. (5) (4)

REFERENCES

1. 10 CFR 50, Appendix J.
2. ~~FSAR~~ UFSAR, Section [ ] 3.8
3. ~~FSAR~~ UFSAR, Section [ ] 6.2
4. UFSAR, Section 15.6

NUREG-1432 EXCEPTIONS
SPECIFICATION 3.6.2

1. Grammar and/or editorial changes have been made to enhance clarity. No technical or intent changes to the Specification are made by this change.

2. The plant specific titles, nomenclature, number, parameter/value, reference, system description, system design, operating practices or analysis description was used (additions, deletions, and/or changes are included). Plant specific parameters/values were directly transferred from the CTS to the ITS.

3. NUREG-1432 SR 3.6.2.1 contains details of leakage rate testing. These details have either been moved to ITS 5.0 or are relocated to the Containment Leakage Rate Testing Program or Bases. Relocation of these details will allow control of changes in accordance with 10CFR50.59. The details of leakage rate testing required by 10CFR50, Appendix J are required by law and cannot be modified by the licensee without obtaining exemption. There is no reduction in the level of safety resulting from these changes since the requirements still exist in other documents and programs. These changes provide an appropriate measure of regulatory control and reduce the NRC and PVNGS resources required to process future changes. These changes are consistent with the NRC guidelines for implementation of 10CFR50, Appendix J, Option B.

4. NUREG-1432 SR 3.6.2.2 requires testing of the air lock interlock mechanisms once per 184 days. ITS SR 3.6.2.2 changes the frequency of this testing to once per 24 months. The interlocks function to ensure that only one door at a time can be opened in an air lock during periods when containment OPERABILITY is required. During periods when containment OPERABILITY is not required (e.g. refueling outages), the interlocks are sometimes disabled to allow both doors to remain open for access and egress. Typically, the interlocks are restored at the end of these periods, verified OPERABLE in accordance with this SR, and not disturbed until the next period when containment OPERABILITY is not required. This change is consistent with TSTF-17 which has been approved by the NRC. Ref. DOC L.5.

5. Testing of the interlock mechanism is accomplished by having one door in an air lock not completely engaged in the closed position, while attempting to open the second door. Failure of this SR results in a loss of containment OPERABILITY during the time both doors are 'opened'. Since normal operating practices for the air locks precludes opening both doors at the same time, the only time the interlocks are challenged is during testing. Performing a SR which challenges containment OPERABILITY is contrary to conservative practices. Changing the Frequency of this SR to allow testing to be performed during periods when containment OPERABILITY is not required is a prudent measure which does not significantly impact safety. This change is consistent with TSTF Traveller TSTF-17.

6. NOT USED

7. NUREG-1432 B3.6.2 Actions states in part, "It is preferred that the airlock be accessed from inside primary containment by entering through the other OPERABLE air lock. However, if this is not practicable...," and, "... If ALARA conditions permit, entry and exit should be via an OPERABLE air lock." ITS B3.6.2 Actions has replaced the first statement with, "If the inner door is inoperable...," and deleted the second statement. The PVNGS current licensing bases allows the outer air lock door to be opened for 1 hour per year to perform repairs of an inoperable inner door. The small amount of time during which this evolution occurs does not warrant the added exposure and resources associated with transit through containment to the other air lock, establishment of radiological and security controls at the other air lock, and testing of the other air lock. Since the 1 hour time limit has never been approached at PVNGS, it is acceptable to remove the constraint. This change is discussed in DOC L.2. Since the deleted statement is a preference and not a requirement, removal does not impact safety.

8. NUREG-1432 B3.6.2 Actions contains an explanation for a note contained in the LCO which states, "Required Actions B.1, B.2, and B.3 are not applicable if both doors in the same airlock are inoperable and Condition C is entered." ITS B3.6.2 Actions contains additional text which clarifies that inoperable interlocks do not cause both doors to be inoperable and therefore require entry into Condition C.

   The added text provides clarification that although the function of the interlocks affects both doors, it is not necessary to enter Condition C due solely to inoperable interlocks. In order for Action B Note 1 to apply, you must be in Condition A (if both doors in the same air lock are inoperable then Condition A must be entered for one door inoperable), Condition B (by default since that is where the subject note is located), and Condition C (if both doors in the same air lock are inoperable then Action C must be entered since no other Condition is specified for two doors in the same air lock inoperable) concurrently. The added text does not change the intent or application of the specification, it only provides additional clarification for users.

9. Operations personnel requested that an additional frequency be specified to alert users to the presence of a conditional Surveillance. Addition of this flag does not alter the frequency specified in regulations or the Containment Leakage Rate Testing Program. This change does not impact safety.

PVNGS CTS
SPECIFICATION 3.6.2
MARK UP

Specification 3.6.2
(3.6.2/5.0)

A.1

3.6 CONTAINMENT SYSTEMS

3.6.2 CONTAINMENT AIR LOCKS

~~LIMITING CONDITION FOR OPERATION~~

LCO 3.6.2 ~~3.6.1.3~~ ~~Each~~ TWO containment air locks shall be OPERABLE with:

ITS 3.6.2

a. ~~Both doors closed except when the air lock is being used for normal transit entry and exit through the containment, then at least one air lock door shall be closed, and~~ LA.1

b. An overall air lock leakage rate of less than or equal to 0.05 L_a at P_a, 49.5 psig.

ITS 5.0

ITS 3.6.2 APPLICABILITY: MODES 1, 2, 3, and 4.

Insert 1 ACTION:

One or more containment air locks

ACT A ~~a.~~ With one containment air lock door inoperable: Within 1 hour, verify M.1

Insert 2 ~~1.~~ ~~Maintain at least~~ the OPERABLE air lock door closed~~*~~ and ~~either restore the inoperable air lock door to OPERABLE status~~ within 24 hours ~~or~~ lock the OPERABLE air lock door closed. ~~Operation may then continue until performance of the next required overall air lock leakage test provided that the OPERABLE air lock door is verified to be locked closed at least once per 31 days, or~~ A.2 L.1

Insert 3

ACT D ~~2.~~ Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

~~3. The provisions of Specification 3.0.4 are not applicable.~~ A.3

ACT C ~~b.~~ With the containment air lock inoperable, Verify within 1 hour except as the result of an inoperable air lock door, ~~maintain~~ at least one air lock door closed; restore the inoperable air lock 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. M.1

Insert 4

ACT D

~~SURVEILLANCE REQUIREMENTS~~

~~4.6.1.3~~ ~~Each containment air lock shall be demonstrated OPERABLE:~~

Insert 1 Perform required air lock leakage rate testing

SR 3.6.2.1 ~~a.~~ In accordance with the Containment Leakage Rate Testing Program ~~at periodic intervals~~ and following each closing as specified. ~~The provisions of Specification 4.0.2 are not applicable to the overall air lock leakage test.~~ A.4 A.10

~~*Except during entry to repair an inoperable inner door, for a cumulative time not to exceed 1 hour per year.~~ L.2

Specification 3.6.2

3.6 CONTAINMENT SYSTEMS

~~SURVEILLANCE REQUIREMENTS (Continued)~~

24 1.5

SR3.6.2.2 ~~b~~. At least once per ~~6~~ months by verifying that only one door in each air lock can be opened at a time.

INSERT FOR CTS 3.6.1.3 MARKUP
ACTION SECTION

INSERT 1

------------------------------NOTES APPLICABLE TO ALL ACTIONS------------------------------

1. Entry and exit is permissible to perform repairs on the affected air lock components. L.2
2. Separate Condition entry is allowed for each air lock. A.5
3. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when leakage results in exceeding the overall containment leakage rate acceptance criteria. A.6

INSERT 2

-------------------------------------NOTES FOR ACTION A-------------------------------------

1. Required Actions A.1, A.2, and A.3 are not applicable if both doors in the same air lock are inoperable and Condition C is entered. A.7
2. Entry and exit is permissible for 7 days under administrative controls if both air locks are inoperable. L.2
3. Air lock doors in high radiation areas may be verified locked closed by administrative means. < Applicable to Action A.3 only > L.3

INSERT 3

Condition and Required Action B

--NOTES--

1. Required Actions B.1, B.2, and B.3 are not applicable if both doors in the same air lock are inoperable and Condition C is entered. A.8
2. Entry and exit of containment is permissible under the control of a dedicated individual. L.4
3. Air lock doors in high radiation areas may be verified locked closed by administrative means. < Applicable to Action B.3 only > L.3

With one or more containment air locks with containment air lock interlock inoperable:
within 1 hour, verify an OPERABLE door is closed in the affected air lock; and,
within 24 hours, lock an OPERABLE door closed in the affected air lock; and,
once per 31 days, verify an OPERABLE door is locked closed in the affected air lock. L.4

INSERT 4

...immediately initiate action to evaluate overall containment leakage rate per LCO 3.6.1, and... A.6

INSERT FOR CTS 4.6.1.3 MARKUP
SURVEILLANCE REQUIREMENTS SECTION

INSERT 1

-----NOTES-----

1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. A.9
2. Results shall be evaluated against acceptance criteria applicable to SR 3.6.1.1. A.6

DISCUSSION OF CHANGES
SPECIFICATION 3.6.2

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering is in accordance with the Combustion Engineering Plant (CEOG) Standard Technical Specifications NUREG-1432, Rev. 1 (NUREG-1432). As a result, the Palo Verde Nuclear Generating Station (PVNGS) Improved Technical Specifications (ITS) should be more readable, and therefore understandable, by plant operators as well as other users. During the reformatting and renumbering of the ITS, no technical changes (either actual or interpretational) to the Current Technical Specification (CTS) were made unless they were identified and justified.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During NUREG-1432 development, certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or interpretational) to the CTS.

Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more detail does not result in a technical change.

A.2 CTS 3.6.1.3 Action a.1 states in part, "Maintain at least the OPERABLE air lock door closed and either restore the inoperable air lock door to OPERABLE status within 24 hours or lock the OPERABLE air lock door closed. ..." ITS 3.6.2 Required Action A.2 allows 24 hours to lock the Operable door closed in the effective air lock but does not explicitly state the option of restoring OPERABILITY within the 24 hours. ITS LCO 3.0.2 states in part, "... If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required, unless otherwise stated." The Bases for ITS LCO 3.0.2 states in part, "... Whether stated as a Required Action or not, correction of the entered Condition is an action that may always be considered upon entering ACTIONS. ..." The option of restoring OPERABILITY is already provided generically by ITS LCO 3.0.2, therefore it need not be restated in the individual Specifications. This change does not impact safety and is consistent with NUREG-1432.

ADMINISTRATIVE CHANGES (continued)

A.3 CTS 3.6.1.3 Action a.3 states, "The provisions of Specification 3.0.4 are not applicable." ITS LCO 3.6.2 does not contain an exception to ITS LCO 3.0.4. CTS 3.0.4 and ITS LCO 3.0.4 prohibit changing Modes or specified Conditions in the Applicability when an LCO is not met and the associated Action requires a shutdown if they are not met within a specified time interval. CTS 3.6.1.3 Action a.3 therefore allows changing Modes with an inoperable air lock door. ITS LCO 3.6.2 Action A allows operation with an inoperable air lock door for an unlimited period of time; therefore, ITS LCO 3.0.4 allows the change in Modes to be made and no exception is required. Removing CTS 3.6.1.3 Action a.3 is an administrative change which results in no difference in the application of the Specification. This change does not impact safety and is consistent with NUREG-1432.

A.4 CTS 4.6.1.3 Action a states in part, "In accordance with the Containment Leakage Rate Testing Program at periodic intervals and following each closing as specified. ..." The Frequency for air lock leakage rate testing specified in ITS SR 3.6.2.1 is , "In accordance with the Containment Leakage Rate Testing Program AND Following each closing as specified." Since the intervals for containment air lock leakage rate testing are contained in the referenced Containment Leakage Rate Testing Program, it is not necessary to state that the performance of the tests take place at periodic intervals. Removal of this statement does not alter the Frequency at which Surveillances are performed. This change does not impact safety and is consistent with NUREG-1432.

A.5 ITS LCO 3.6.2 Actions are modified by several Notes. Note 2 allows separate Condition entry for each air lock. There is no similar modification explicitly stated in CTS 3.6.1.3; however, the wording of the LCO, "Each containment air lock shall be OPERABLE ...," implies that the Actions are to be applied separately to each air lock. Since the air locks function independently of each other and not as a system, separate Condition entry is acceptable. ITS 3.6.2 Action Note 2 provides clarification and does not impact safety. This change is consistent with NUREG-1432.

ADMINISTRATIVE CHANGES (continued)

A.6 CTS 3.6.1.3 Actions do not refer to CTS 3.6.1.1 Containment Integrity or CTS 3.6.1.2 Containment Leakage for actions to be taken if the leakage rate of the air lock(s) results in violating CONTAINMENT INTEGRITY. ITS LCO 3.6.2 Actions are modified by several Notes. Note 3 refers to the applicable Conditions and Required Actions of ITS LCO 3.6.1 when the air lock leakage rate results in exceeding the overall containment leakage rate acceptance criteria. ITS LCO 3.6.2 Required Action C.1 requires evaluation of the effect of ITS LCO 3.6.2 Condition C on containment OPERABILITY per ITS LCO 3.6.1. ITS SR 3.6.2.1 contains a Note requiring evaluating results of leakage rate tests to determine effect on SR 3.6.1.1. Although there is no explicit reference to CTS 3.6.1.1 or CTS 3.6.1.2 contained in CTS 3/4.6.1.3, the requirements still apply and the impact of other LCOs and Surveillances must be evaluated. The ITS Notes and Actions do not alter any existing requirements and only serve to remind the licensee that other Specifications may be affected. These clarifying Notes and Actions have no impact on safety. This change is consistent with NUREG-1432.

A.7 CTS 3.6.1.3 Action b states in part, "With the containment air lock inoperable, except as a result of an inoperable air lock door ... ." ITS LCO 3.6.2 Action A is modified by several Notes. Note 1 states, "Required Actions A.1, A.2, and A.3 are not applicable if both doors in the same air lock are inoperable and Condition C is entered." Condition C is for one or more air locks inoperable for reasons other than one air lock door inoperable or interlocks inoperable. With the air lock inoperable for reasons other than one air lock door inoperable or interlocks inoperable, there is a potential loss of CONTAINMENT INTEGRITY per CTS 3.6.1.1 or containment OPERABILITY per ITS LCO 3.6.1. The Required Actions specified in CTS 3.6.1.3 Action b or ITS LCO 3.6.2 Action C are adequate to address this Condition. Addition of this Note is necessary due to the ITS practice of multiple Condition entry and makes application of ITS LCO 3.6.2 consistent with CTS 3.6.1.3. This change does not impact safety and is consistent with NUREG-1432.

ADMINISTRATIVE CHANGES (continued)

A.8 CTS 3.6.1.3 Action b states in part, "With the containment air lock inoperable, except as the result of an inoperable air lock door ... ." ITS LCO 3.6.2 Action B is modified by several Notes. Note 1 states, "Required Actions B.1, B.2, and B.3 are not applicable if both doors in the same air lock are inoperable and Condition C is entered." Condition C is for one or more air locks inoperable for reasons other than one air lock door inoperable or interlocks inoperable. With the air lock inoperable due to the interlocks being inoperable, compliance with CTS 3.6.1.3 Action b is required. Since the Required Actions of CTS 3.6.1.3 Action b are similar to ITS 3.6.3 Action C, no Note is necessary if the interlocks are inoperable since only CTS 3.6.1.3 Action b would be required. This change does not impact safety and is consistent with NUREG-1432.

A.9 ITS SR 3.6.1.2.1 is modified by several Notes. Note 1 states, "An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test." There is no similar clarification stated in CTS 4.6.1.3. The current requirements for evaluation of the effect of an inoperable air lock door on overall air lock OPERABILITY are contained in the Containment Leakage Rate Testing Program. Application of the Containment Leakage Rate Testing Program is consistent with the ITS. The addition of this Note has no effect on the safe operation of the plant. The air locks are designed to maintain a leak tight boundary during a DBA with only one Operable door closed. The Actions specified for the Condition of one door inoperable are sufficient to assure the OPERABILITY of the overall air lock. This change does not impact safety and is consistent with NUREG-1432.

A.10 CTS 4.6.1.3 states in part, "The provisions of Specification 4.0.2 are not applicable to the overall air lock leakage test." ITS SR 3.6.2.1 does not contain this exemption. CTS 4.0.2 allows the Surveillance intervals to be extended a maximum of 25% from the specified Surveillance interval. Since testing intervals are specified by regulation, the extension does not apply as stated in ITS SR 3.0.2 Bases. This is an administrative change since removal of the note does not result in relaxation of any requirements in the application of the Containment Leakage Rate Testing Program. This change does not impact safety and is consistent with the guidance provided by the NRC for incorporation of 10CFR50, Appendix J, Option B in the Improved Technical Specifications. Reference NUREG Exception 3.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 CTS 3.6.1.3 Action a.1 states in part, "Maintain at least the OPERABLE air lock door closed ... ." CTS 3.6.1.3 Action b states in part, "... maintain at least one air lock door closed ... ." ITS LCO 3.6.2 Required Action A.1 and ITS LCO Required Action B.1 require verifying the Operable door is closed within one hour. ITS LCO 3.6.2 Required Action C.2 requires verification that a door is closed within 1 hour. Addition of the 1 hour Completion Time to the Actions in ITS LCO 3.6.2 is a more restrictive change since CTS 3.6.1.3 does not specify Completion Times for these Actions. The 1 hour Completion Time is consistent with the requirements for containment OPERABILITY. The addition of this requirement constitutes a more restrictive change to PVNGS current plant operation. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - RELOCATIONS

LA.1 CTS 3.6.1.3 LCO a contains operational requirements for the air lock doors. The CTS states that both air lock doors are to remain closed "except when the air lock is being used for normal transit entry and exit through containment, then at least one air lock door shall be closed." The ITS typically does not contain these type of operational requirements. These type of operational requirements are found in the ITS Bases. Relocation of these detail to the ITS Bases does not alter or change the requirements. the details for maintaining theair lock door normally closed except for entry and exit through containment is discussed in the ITS Bases. This operational requirement is not necessary in order to determine the OPERABILITY of a system, component or structure and therefore is being relocated to the Bases.

Any change to the requirements in the Bases will be governed by the provisions of the Technical Specification Bases Control Program. This provides an equivalent level of control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement to the Bases is acceptable and is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE

L.1 CTS 3.6.1.3 Action a.1 states in part, "... Operation may then continue until performance of the next required overall air lock leakage test provided that ... ." ITS 3.6.2 Action A allows continued operation for an unlimited time as long as the Operable door is verified to be locked closed at least once per 31 days. ITS 3.6.2 allows continued operation with one door inoperable for an unlimited period of time. Operating with one door inoperable for an unlimited period is acceptable and does not impact safety because closure of a single door in each air lock is sufficient to ensure containment integrity. This change is consistent with NUREG-1432.

L.2 CTS 3.6.1.3 Action a.1 is modified by an asterisk which states, "Except during entry to repair an inoperable inner door, for a cumulative time not to exceed 1 hour per year." ITS LCO 3.6.2 Actions are modified by several Notes. Action Note 1 states, "Entry and exit is permissible to perform repairs on the affected air lock components." ITS LCO 3.6.2 Action A Note 2 states, "Entry and exit is permissible for 7 days under administrative controls if both air locks are inoperable." Action Note 1 allows entry and exit to perform repairs on affected air lock components and places no restrictions on the time period the Operable door may remain open. Action A Note 2 allows entry and exit for 7 days to perform TS required activities or activities on equipment that supports TS-required equipment if both air locks are inoperable. This Note places no restrictions on how long the Operable door may remain open during this time period. Although there is no limit placed on the time an Operable door may remain open with one door inoperable, the Bases states that the Operable door must be closed immediately after each entry and exit. Entry and exit should be through an Operable air lock if possible.

The ability to open the Operable door is acceptable because of the low probability of an event that could pressurize the containment during the short period of time in which the Operable door is expected to be open. Allowing entry and exit for reasons other than repair of the inoperable door (e. g., for performance of Surveillances or other TS activities) results in an increase in the amount of time during which the containment boundary is not intact. This small increase is acceptable based on the types of activities for which entry is allowed. This change does not impact safety and is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

L.3 CTS 3.6.1.3 Action a.1 requires verification every 31 days that an Operable door is locked closed if the other door is inoperable. ITS LCO 3.6.2 Action A.3 and ITS LCO 3.6.2 Action B.3 also require verification of the locked door every 31 days but are modified by Notes which allow the verification to be by administrative means if the doors are in high radiation areas. Verification of the locked doors in high radiation areas by administrative means is acceptable since access to these areas is typically restricted. The probability of misalignment of the door once it has been verified to be in the correct position is minimal. This change is consistent with NUREG-1432.

L.4 CTS 3.6.1.3 Action b requires restoration of OPERABILITY within 24 hours to avoid a shutdown if the air lock is inoperable due to an inoperable interlock mechanism. ITS LCO 3.6.2 Action B allows continued operation of the unit by closing an Operable door within 1 hour, locking the door within 24 hours, and verifying that it is locked closed once per 31 days. The purpose of the interlock mechanism is to assure that only one air lock door is opened at a time. The interlocks have no effect on the air lock leakage rate if at least one door is maintained closed at all times. Proper operation of the air lock can be administratively controlled as allowed by ITS LCO 3.6.2 Action B, Note 2. With one of the Operable doors locked closed, or maintained closed by administrative means, containment integrity is unaffected. The Actions specified in the ITS are sufficient to assure containment OPERABILITY is not adversely affected with the interlocks inoperable. This change does not impact safety and is consistent with NUREG-1432.

L.5 CTS 4.6.1.3c requires testing the air lock door interlocks at least once per 6 months. ITS SR 3.6.2.2 requires testing the interlocks on a 24 month Frequency. Typically the interlocks are restored after each refueling outage, verified Operable in accordance with this SR, and not disturbed until the next refueling outage. Normal operation of the air lock is such that the interlocks are not challenged. The only time the interlocks are challenged is during testing. The failure rate of these devices in the past has been very low. Decreasing the Frequency to once per 24 months does not impact safety. This change is consistent with TSTF Traveller TSTF-17. See NUREG Exception 4 for additional discussion.

NO SIGNIFICANT HAZARDS CONSIDERATION
SPECIFICATION 3.6.2

ADMINISTRATIVE CHANGES
(ITS 3.6.2 Discussion of Changes Labeled A.1, A.2, A.3, A.4, A.5, A.6, A.7, A.8, A.9 and A.10)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, is converting to the ITS as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." The proposed changes involve the reformatting, renumbering, rewording of the Technical Specifications (TS) and Bases with no change in intent, and the incorporation of current operating practices consistent with NUREG-1432. These changes, since they do not involve technical changes to the Current TS (CTS), are administrative. Below are the No Significant Hazards Consideration (NSHC) for the conversion of this Section/Chapter to NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

> The proposed changes involve reformatting, renumbering, and rewording of the CTS and Bases along with incorporation of PVNGS current operating practices and other changes to the CTS as discussed in the specific Discussion of Changes listed above in order to be consistent with NUREG-1432. The reformatting, renumbering, and rewording along with the other changes listed above, involves no technical changes to the CTS. Specifically, there will be no change in the requirements imposed on PVNGS due to these changes. During development of NUREG-1432, certain wording preferences or English language conventions were adopted. The proposed changes to this Section/Chapter are administrative in nature and do not impact initiators of any analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ADMINISTRATIVE CHANGES
(ITS 3.6.2 Discussion of Changes Labeled A.1, A.2, A.3, A.4, A.5, A.6, A.7, A.8, A.9 and A.10) (continued)

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or change the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes are administrative in nature and will not involve any technical changes. The proposed changes will not reduce a margin of safety because they have no impact on any safety analysis assumptions. Also, because these changes are administrative in nature, no question of safety is involved. Therefore, these changes do not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.6.2 Discussion of Changes Labeled M.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. This particular NSHC is for the changes labeled "Technical Changes - More Restrictive" described in the specific Discussion of Changes listed above. The proposed changes incorporate more restrictive changes into the CTS by either making current requirements more stringent or adding new requirements which currently do not exist.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

> The proposed changes provide more stringent requirements than previously existed in the CTS. The more stringent requirements will not result in operation that will increase the probability of initiating an analyzed event. If anything, the new requirements may decrease the probability or consequences of an analyzed event by incorporating the more restrictive changes discussed in the specific Discussion of Changes listed above. These changes will not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements will not alter the operation and will continue to ensure process variables, structures, systems, or components are maintained consistent with safety analyses and licensing basis. These changes have been reviewed to ensure that no previously evaluated accident has been adversely affected. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident evaluated.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.6.2 Discussion of Changes Labeled M.1)

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Making existing requirements more restrictive and adding more restrictive requirements to the CTS will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes do impose different requirements. However, they are consistent with the assumptions made in the safety analyses, licensing basis, and NUREG-1432. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed changes provide more stringent requirements than previously existed in the CTS. An evaluation of these changes concluded that adding these more restrictive requirements either increases or has no impact on the margin of safety. The changes provide additional restrictions which may enhance plant safety. These changes maintain requirements of the safety analysis, licensing basis, and NUREG-1432. As such, no question of safety is involved. Therefore, these changes will not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.6.2 Discussion of Changes Labeled LA.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed changes, since detail is being removed from the CTS to a Licensee Controlled Document, are less restrictive. The descriptions of these changes are in the Discussion of Changes listed above.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

Standard 1 - Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

> The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes do not result in any hardware changes or changes to plant operating practices. The details being relocated are not assumed to be an initiator of any analyzed event. The Licensee Controlled Document containing the relocated requirements will be maintained using the provisions of 10 CFR 50.59 or other specified control processes and is subject to the change control process in the Administrative Controls Section of the ITS. Since any changes to a Licensee Controlled Document will be evaluated, no increase in the probability or consequences of an accident previously evaluated will be allowed. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident previously evaluated.

<u>TECHNICAL CHANGES - RELOCATIONS</u>
(ITS 3.6.2 Discussion of Changes Labeled LA.1) (continued)

<u>Standard 2.</u>-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes will not impose different requirements and adequate control of information will still be maintained. These changes will not alter assumptions made in the safety analysis or licensing basis. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

<u>Standard 3.</u>-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not reduce a margin of safety since they have no impact on any safety analysis assumptions. In addition, the requirements to be transposed from the CTS to the Licensee Controlled Document are the same as the CTS. Since any future changes to this Licensee Controlled Document will be evaluated per the requirements of 10 CFR 50.59, or other specified control processes, no reduction (significant or insignificant) in a margin of safety will be allowed. Therefore, these changes will not involve a significant reduction in a margin of safety.

The NRC review provides a certain margin of safety, and although this review will no longer be performed prior to submittal, the NRC still inspects the 10 CFR 50.59 process. The proposed changes are consistent with NUREG-1432, which was approved by the NRC Staff. The change controls for proposed relocated details and requirements provide an acceptable level of regulatory authority. Revising the CTS to reflect the approved level of detail per NUREG-1432 reinforces the conclusion that there is not a significant reduction in the margin of safety. Therefore, revising the CTS to reflect the NRC accepted level of detail and requirements ensures no reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.2 Discussion of Changes Labeled L.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG 1432.

L.1 CTS 3.6.1.3 Action a.1 states in part, "... Operation may then continue until performance of the next required overall air lock leakage test provided that ... ." ITS 3.6.2 Action A allows continued operation for an unlimited time as long as the Operable door is verified to be locked closed at least once per 31 days. ITS 3.6.2 allows continued operation with one door inoperable for an unlimited period of time. Operating with one door inoperable for an unlimited period is acceptable and does not impact safety because closure of a single door in each air lock is sufficient to ensure containment integrity. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.2 Discussion of Changes Labeled L.1) (continued)

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change allows operation for an unlimited period of time with one inoperable door in an air lock if the Operable door is locked closed. The CTS allows continued operation until the next required overall leakage rate test in this condition. With one air lock door inoperable and the Operable door locked closed, the air lock provides a level of integrity comparable to that required to support containment OPERABILITY. Each air lock has two doors which in turn have two seals. The Operable door alone (which has two intact seals) is sufficient to provide the necessary level of integrity to maintain containment Operable. Locking the Operable door closed and opening it only under administrative controls assures that the air lock door will support containment OPERABILITY as required. This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change allows operation for an unlimited period of time with one inoperable door in an air lock if the Operable door is locked closed. The CTS allows continued operation until the next required overall leakage rate test in this condition. With one air lock door inoperable and the Operable door locked closed, the air lock provides a level of integrity comparable to that required to support containment OPERABILITY. Each air lock has two doors which in turn have two seals. The Operable door alone (which has two intact seals) is sufficient to provide the necessary level of integrity to maintain containment Operable. Locking the Operable door closed and opening it only under administrative controls assures that the air lock door will support containment OPERABILITY as required. This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.2 Discussion of Changes Labeled L.1) (continued)

Standard 3. -- Does the proposed change involve a significant reduction in a margin of safety?

The proposed change allows operation for an unlimited period of time with one inoperable door in an air lock if the Operable door is locked closed. The CTS allows continued operation until the next required overall leakage rate test in this condition. With one air lock door inoperable and the Operable door locked closed, the air lock provides a level of integrity comparable to that required to support containment OPERABILITY. Each air lock has two doors which in turn have two seals. The Operable door alone (which has two intact seals) is sufficient to provide the necessary level of integrity to maintain containment Operable. Locking the Operable door closed and opening it only under administrative controls assures that the air lock door will support containment OPERABILITY as required. This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.2 Discussion of Changes Labeled L.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for conversion to NUREG-1432.

L.2 CTS 3.6.1.3 Action a.1 is modified by an asterisk which states, "Except during entry to repair an inoperable inner door, for a cumulative time not to exceed 1 hour per year." ITS LCO 3.6.2 Actions are modified by several Notes. Action Note 1 states, "Entry and exit is permissible to perform repairs on the affected air lock components." ITS LCO 3.6.2 Action A Note 2 states, "Entry and exit is permissible for 7 days under administrative controls if both air locks are inoperable." Action Note 1 allows entry and exit to perform repairs on affected air lock components and places no restrictions on the time period the Operable door may remain open. Action A Note 2 allows entry and exit for 7 days to perform TS required activities or activities on equipment that supports TS-required equipment if both air locks are inoperable. This Note places no restrictions on how long the Operable door may remain open during this time period. Although there is no limit placed on the time an Operable door may remain open with one door inoperable, the Bases states that the Operable door must be closed immediately after each entry and exit. Entry and exit should be through an Operable air lock if possible.

The ability to open the Operable door is acceptable because of the low probability of an event that could pressurize the containment during the short period of time in which the Operable door is expected to be open. Allowing entry and exit for reasons other than repair of the inoperable door (e. g., for performance of Surveillances or other TS activities) results in an increase in the amount of time during which the containment boundary is not intact. This small increase is acceptable based on the types of activities for which entry is allowed. This change does not impact safety and is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.2 Discussion of Changes Labeled L.2) (continued)

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change adds two Notes which allow entry through an inoperable air lock. The first Note is generic to all air lock actions and allows entry under administrative controls to perform repairs on inoperable air lock components. There is no restriction on the amount of time during which the air lock may be used. The second Note allows entry for seven days after a second air lock door in an air lock is determined to be inoperable. This Note allows entry for the purpose of performing TS Surveillances and other activities related to TS equipment. The CTS allows entry through an operable outer air lock door to repair an inoperable inner air lock door for a cumulative time not to exceed one hour per year. Allowing entry to perform repairs and other TS related activities is acceptable based on the low probability of an event that could pressurize the containment during the short period of time in which the Operable door is expected to be open. Allowing entry and exit for reasons other than repair of the inoperable door (e. g., for performance of Surveillances or other TS activities) results in an increase in the amount of time during which the containment boundary is not intact. This small increase is acceptable based on the types of activities for which entry is allowed. This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.2 Discussion of Changes Labeled L.2) (continued)

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change adds two Notes which allow entry through an inoperable air lock. The first Note is generic to all air lock actions and allows entry under administrative controls to perform repairs on inoperable air lock components. There is no restriction on the amount of time during which the air lock may be used. The second Note allows entry for seven days after a second air lock door in an air lock is determined to be inoperable. This Note allows entry for the purpose of performing TS Surveillances and other activities related to TS equipment. The CTS allows entry through an operable outer air lock door to repair an inoperable inner air lock door for a cumulative time not to exceed one hour per year. Allowing entry to perform repairs and other TS related activities is acceptable based on the low probability of an event that could pressurize the containment during the short period of time in which the Operable door is expected to be open. Allowing entry and exit for reasons other than repair of the inoperable door (e. g., for performance of Surveillances or other TS activities) results in an increase in the amount of time during which the containment boundary is not intact. This small increase is acceptable based on the types of activities for which entry is allowed. This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.2 Discussion of Changes Labeled L.2) (continued)

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed change adds two Notes which allow entry through an inoperable air lock. The first Note is generic to all air lock actions and allows entry under administrative controls to perform repairs on inoperable air lock components. There is no restriction on the amount of time during which the air lock may be used. The second Note allows entry for seven days after a second air lock door in an air lock is determined to be inoperable. This Note allows entry for the purpose of performing TS Surveillances and other activities related to TS equipment. The CTS allows entry through an operable outer air lock door to repair an inoperable inner air lock door for a cumulative time not to exceed one hour per year. Allowing entry to perform repairs and other TS related activities is acceptable based on the low probability of an event that could pressurize the containment during the short period of time in which the Operable door is expected to be open. Allowing entry and exit for reasons other than repair of the inoperable door (e. g., for performance of Surveillances or other TS activities) results in an increase in the amount of time during which the containment boundary is not intact. This small increase is acceptable based on the types of activities for which entry is allowed. This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.2 Discussion of Changes Labeled L.3)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for conversion to NUREG-1432.

L.3 CTS 3.6.1.3 Action a.1 requires verification every 31 days that an Operable door is locked closed if the other door is inoperable. ITS LCO 3.6.2 Action A.3 and ITS LCO 3.6.2 Action B.3 also require verification of the locked door every 31 days but are modified by Notes which allow the verification to be by administrative means if the doors are in high radiation areas. Verification of the locked doors in high radiation areas by administrative means is acceptable since access to these areas is typically restricted. The probability of misalignment of the door once it has been verified to be in the correct position is minimal. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change allows verification of air lock doors which are locked closed to comply with Actions to be performed by administrative means if located in high radiation areas. With one air lock door inoperable or the air lock interlocks inoperable, ITS LCO 3.6.2 Actions require an Operable door to be locked closed. Verification that this door remains locked closed is required every 31 days. Allowing this verification to be performed by administrative means for doors in high radiation areas maintains personnel exposure ALARA. This change is acceptable since access to these areas is restricted and the probability of misalignment of the door once it has been verified to be in the correct position is minimal. This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.2 Discussion of Changes Labeled L.3) (continued)

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change allows verification of air lock doors which are locked closed to comply with Actions to be performed by administrative means if located in high radiation areas. With one air lock door inoperable or the air lock interlocks inoperable, ITS LCO 3.6.2 Actions require an Operable door to be locked closed. Verification that this door remains locked closed is required every 31 days. Allowing this verification to be performed by administrative means for doors in high radiation areas maintains personnel exposure ALARA. This change is acceptable since access to these areas is restricted and the probability of misalignment of the door once it has been verified to be in the correct position is minimal. This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed change allows verification of air lock doors which are locked closed to comply with Actions to be performed by administrative means if located in high radiation areas. With one air lock door inoperable or the air lock interlocks inoperable, ITS LCO 3.6.2 Actions require an Operable door to be locked closed. Verification that this door remains locked closed is required every 31 days. Allowing this verification to be performed by administrative means for doors in high radiation areas maintains personnel exposure ALARA. This change is acceptable since access to these areas is restricted and the probability of misalignment of the door once it has been verified to be in the correct position is minimal. This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.2 Discussion of Changes Labeled L.4)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for conversion to NUREG-1432.

L.4 CTS 3.6.1.3 Action b requires restoration of OPERABILITY within 24 hours to avoid a shutdown if the air lock is inoperable due to an inoperable interlock mechanism. ITS LCO 3.6.2 Action B allows continued operation of the unit by closing an Operable door within 1 hour, locking the door within 24 hours, and verifying that it is locked closed once per 31 days. The purpose of the interlock mechanism is to assure that only one air lock door is opened at a time. The interlocks have no effect on the air lock leakage rate if at least one door is maintained closed at all times. Proper operation of the air lock can be administratively controlled as allowed by ITS LCO 3.6.2 Action B, Note 2. With one of the Operable doors locked closed, or maintained closed by administrative means, containment integrity is unaffected. The Actions specified in the ITS are sufficient to assure containment OPERABILITY is not adversely affected with the interlocks inoperable. This change does not impact safety and is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.2 Discussion of Changes Labeled L.4) (continued)

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change adds an Action for inoperable air lock interlocks which allows the use of administrative controls to assure that at least one door in an air lock remains closed at all times if the interlocks are inoperable. There is no separate Action in the CTS for inoperable interlocks. The CTS requires inoperable interlocks to be treated in the same manner as a Condition which results in a loss of containment Operability. The function of the interlocks is to assure that only one door at a time is open. Opening two doors in an air lock at once results in a direct leak path out of containment. The interlocks have no effect on the air lock leakage rate if at least one door is maintained closed at all times. Proper operation of the air lock can be administratively controlled as allowed by ITS Actions. With one of the Operable doors locked closed, or maintained closed by administrative means, containment integrity is unaffected. The Actions specified in the ITS are sufficient to assure containment OPERABILITY is not adversely affected with the interlocks inoperable. This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change adds an Action for inoperable air lock interlocks which allows the use of administrative controls to assure that at least one door in an air lock remains closed at all times if the interlocks are inoperable. There is no separate Action in the CTS for inoperable interlocks. The CTS requires inoperable interlocks to be treated in the same manner as a Condition which results in a loss of containment Operability. The function of the interlocks is to assure that only one door at a time is open. Opening two doors in an air lock at once results in a direct leak path out of containment. The interlocks have no effect on the air lock leakage rate if at least one door is maintained closed at all times. Proper operation of the air lock can be administratively controlled as allowed by ITS Actions. With one of the Operable doors locked closed, or maintained closed by administrative means, containment integrity is unaffected. The Actions specified in the ITS are sufficient to assure containment OPERABILITY is not adversely affected with the interlocks inoperable. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.2 Discussion of Changes Labeled L.4) (continued)

This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed change adds an Action for inoperable air lock interlocks which allows the use of administrative controls to assure that at least one door in an air lock remains closed at all times if the interlocks are inoperable. There is no separate Action in the CTS for inoperable interlocks. The CTS requires inoperable interlocks to be treated in the same manner as a Condition which results in a loss of containment Operability. The function of the interlocks is to assure that only one door at a time is open. Opening two doors in an air lock at once results in a direct leak path out of containment. The interlocks have no effect on the air lock leakage rate if at least one door is maintained closed at all times. Proper operation of the air lock can be administratively controlled as allowed by ITS Actions. With one of the Operable doors locked closed, or maintained closed by administrative means, containment integrity is unaffected. The Actions specified in the ITS are sufficient to assure containment OPERABILITY is not adversely affected with the interlocks inoperable. This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.2 Discussion of Changes Labeled L.5)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for conversion to NUREG-1432.

L.5 CTS 4.6.1.3c requires testing the air lock door interlocks at least once per 6 months. ITS SR 3.6.2.2 requires testing the interlocks on a 24 month Frequency. Typically the interlocks are restored after each refueling outage, verified Operable in accordance with this SR, and not disturbed until the next refueling outage. Normal operation of the air lock is such that the interlocks are not challenged. The only time the interlocks are challenged is during testing. The failure rate of these devices in the past has been very low. Decreasing the Frequency to once per 24 months does not impact safety. This change is consistent with TSTF Traveller TSTF-17. See NUREG Exception 2 for additional discussion.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change decreases the Frequency of Surveillance Testing for the air lock interlock mechanisms from once per 6 months as specified in CTS 4.6.1.3.b to once per 24 months as specified in ITS SR3.6.2.2. The interlocks function to ensure that only one door at a time can be opened in an air lock during periods when containment OPERABILITY is required. During periods when containment OPERABILITY is not required (e.g. refueling outages), the interlocks are sometimes disabled to allow both doors to remain open for access and egress. Typically, the interlocks are restored at the end of these periods, verified OPERABLE in accordance with this SR, and not disturbed until the next period when containment OPERABILITY is not required.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.2 Discussion of Changes Labeled L.5) (continued)

Testing of the interlock mechanism is accomplished by having one door in an air lock not completely engaged in the closed position, while attempting to open the second door. Failure of this SR results in a loss of containment OPERABILITY during the time both doors are 'opened'. Since normal operating practices for the air locks precludes opening both doors at the same time, the only time the interlocks are challenged is during testing. Performing a SR which challenges containment OPERABILITY is contrary to conservative practices. Changing the Frequency of this SR to allow testing to be performed during periods when containment OPERABILITY is not required is a prudent measure which does not significantly impact safety.

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change decreases the Frequency of Surveillance Testing for the air lock interlock mechanisms from once per 6 months as specified in CTS 4.6.1.3.b to once per 24 months as specified in ITS SR3.6.2.2. The interlocks function to ensure that only one door at a time can be opened in an air lock during periods when containment OPERABILITY is required. During periods when containment OPERABILITY is not required (e.g. refueling outages), the interlocks are sometimes disabled to allow both doors to remain open for access and egress. Typically, the interlocks are restored at the end of these periods, verified OPERABLE in accordance with this SR, and not disturbed until the next period when containment OPERABILITY is not required.

Testing of the interlock mechanism is accomplished by having one door in an air lock not completely engaged in the closed position, while attempting to open the second door. Failure of this SR results in a loss of containment OPERABILITY during the time both doors are 'opened'. Since normal operating practices for the air locks precludes opening both doors at the same time, the only time the interlocks are challenged is during testing. Performing a SR which challenges containment OPERABILITY is contrary to conservative practices. Changing the Frequency of this SR to allow testing to be performed during periods when containment OPERABILITY is not required is a prudent measure which does not significantly impact safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.2 Discussion of Changes Labeled L.5) (continued)

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

Standard 3. -- Does the proposed change involve a significant reduction in a margin of safety?

The proposed change decreases the Frequency of Surveillance Testing for the air lock interlock mechanisms from once per 6 months as specified in CTS 4.6.1.3.b to once per 24 months as specified in ITS SR 3.6.2.2. The interlocks function to ensure that only one door at a time can be opened in an air lock during periods when containment OPERABILITY is required. During periods when containment OPERABILITY is not required (e.g. refueling outages), the interlocks are sometimes disabled to allow both doors to remain open for access and egress. Typically, the interlocks are restored at the end of these periods, verified OPERABLE in accordance with this SR, and not disturbed until the next period when containment OPERABILITY is not required.

Testing of the interlock mechanism is accomplished by having one door in an air lock not completely engaged in the closed position, while attempting to open the second door. Failure of this SR results in a loss of containment OPERABILITY during the time both doors are 'opened'. Since normal operating practices for the air locks precludes opening both doors at the same time, the only time the interlocks are challenged is during testing. Performing a SR which challenges containment OPERABILITY is contrary to conservative practices. Changing the Frequency of this SR to allow testing to be performed during periods when containment OPERABILITY is not required is a prudent measure which does not significantly impact safety.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

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NUREG-1432 REV. 1
SPECIFICATION 3.6.3
MARK UP

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3.6 CONTAINMENT SYSTEMS

3.6.3 Containment Isolation Valves (Atmospheric and Dual)

<3.6.3> LCO 3.6.3 Each containment isolation valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

---------------------------------NOTES---------------------------------

<3.6.3*> 1. Penetration flow paths [except for [42] inch purge valve penetration flow paths] may be unisolated intermittently under administrative controls.

<DOC A.3> 2. Separate Condition entry is allowed for each penetration flow path.

<3.6.3**> 3. Enter applicable Conditions and Required Actions for system(s) made inoperable by containment isolation valves.

<DOC A.5> 4. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when leakage results in exceeding the overall containment leakage rate acceptance criteria.

CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.6.3ACT> <DOC A.6> <DOC L.9> A. ---------NOTE--------- Only applicable to penetration flow paths with two containment isolation valves. --------------------- One or more penetration flow paths with one containment isolation valve inoperable [except for purge valve leakage and shield building bypass leakage not within limit].	A.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured. AND	4 hours (continued)

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ACTIONS

<DOC L.1>
<4.6.1.1.a>
<DOC L.6>

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 ---------NOTE--------- Isolation devices in high radiation areas may be verified by use of administrative means. --------------------- Verify the affected penetration flow path is isolated.	Once per 31 days for isolation devices outside containment AND Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment
B. ---------NOTE--------- Only applicable to penetration flow paths with two containment isolation valves. --------------------- One or more penetration flow paths with two containment isolation valves inoperable ~~[~~except for purge valve leakage ~~and shield building bypass leakage~~ not within limit~~s]~~.	B.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	1 hour

<3.6.3 ACT>
<DOC A.6>

(continued)

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.6.3ACT> C. ---------NOTE--------- Only applicable to penetration flow paths with only one containment isolation valve and a closed system. ---------------------- <DOC A.6>	C.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	4 hours
One or more penetration flow paths with one containment isolation valve inoperable. <DOC L.1>	AND	
	C.2 --------NOTE-------- Isolation devices in high radiation areas may be verified by use of administrative means. --------------------	
<4.6.1.1.a>	Verify the affected penetration flow path is isolated.	Once per 31 days
~~[D. Secondary containment bypass leakage not within limit.~~	~~D.1 Restore leakage within limit.~~	~~4 hours]~~
D. ~~E.~~ <3.6.1.7ACTC> One or more penetration flow paths with one or more containment purge valves not within purge valve leakage limits.	~~E.1~~ D.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve with resilient seals, 3 ~~closed manual valve with resilient seals,~~ or blind flange.	24 hours
	AND	
		(continued)

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ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<DOC L.1> ~~E~~ D. (continued)	~~E.2~~ D.2 --------NOTE--------- Isolation devices in high radiation areas may be verified by use of administrative means. --------------------- Verify the affected penetration flow path is isolated.	 Once per 31 days for isolation devices outside containment AND Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment
<DOC L.6>	AND	
<DOC M.1>	~~E.3~~ D.3 Perform SR 3.6.3.6 for the resilient seal purge valves closed to comply with Required Action ~~E.1~~ D.1	Once per ~~[14]~~ 92 days (2)
<3.6.3ACT1.d> <3.6.1.7ACTa> <3.6.1.7ACTb> <3.6.1.7ACTc> ~~F.~~ E. Required Action and associated Completion Time not met.	~~F.1~~ E.1 Be in MODE 3. AND ~~F.2~~ E.2 Be in MODE 5.	6 hours 36 hours

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SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY
<4.6.1.7.1> <DOC A.10>	[SR 3.6.3.1	Verify each [42] inch purge valve is sealed closed except for one purge valve in a penetration flow path while in Condition E D of this LCO.	31 days] (2)
<4.6.1.7.4>	SR 3.6.3.2	Verify each [8] inch purge valve is closed except when the [8] inch purge valves are open for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open.	31 days
<4.6.1.1.a> <DOC L.1> <3.6.3*>	SR 3.6.3.3	-------------------NOTE------------------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. --- Verify each containment isolation manual valve and blind flange that is located outside containment and not locked, sealed, or otherwise secured and is required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	31 days

(continued)

<DOC L.7>

[TSTF-45]

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SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY
<4.6.1.1.a*> <DOC L.1> <DOC L.6> <3.6.3*> <DOC L.7>	SR 3.6.3.4	------NOTE------ Valves and blind flanges in high radiation areas may be verified by use of administrative means. ------------ Verify each containment isolation manual valve and blind flange that is located inside containment, and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls. and not locked, sealed, or otherwise secured	Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days [TSTF-45]
<4.6.3.3> <DOC L.8>	SR 3.6.3.5	Verify the isolation time of each automatic power operated ~~and each automatic~~ containment isolation valve is within limits.	[In accordance with the Inservice Testing Program ~~or 92 days~~] [TSTF-46] ②
<4.6.1.7.2> <4.6.1.7.3>	SR 3.6.3.6	Perform leakage rate testing for containment purge valves with resilient seals.	184 days AND Within 92 days after opening the valve
<4.6.3.2>	SR 3.6.3.7	Verify each automatic containment isolation valve that is not locked, sealed, or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	[18] months

(continued)

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
[SR 3.6.3.8	Verify each [ ] inch containment purge valve is blocked to restrict the valve from opening > [50]%.	[18] months]
[SR 3.6.3.9	Verify the combined leakage rate for all secondary containment bypass leakage paths is ≤ [L_a] when pressurized to ≥ [psig].	-----NOTE----- SR 3.0.2 is not applicable. --------------- In accordance with 10 CFR 50, Appendix J, as modified by approved exemptions]

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SPECIFICATION 3.6.3

BASES MARK UP

B 3.6 CONTAINMENT SYSTEMS

B 3.6.3 Containment Isolation Valves ~~(Atmospheric and Dual)~~

BASES

BACKGROUND

The containment isolation valves form part of the containment pressure boundary and provide a means for fluid penetrations not serving accident consequence limiting systems to be provided with two isolation barriers that are closed on an automatic isolation signal. These isolation devices are either passive or active (automatic). Manual valves, de-activated automatic valves secured in their closed position (including check valves with flow through the valve secured), blind flanges, and closed systems are considered passive devices. Check valves, or other automatic valves designed to close without operator action following an accident, are considered active devices. Two barriers in series are provided for each penetration so that no single credible failure or malfunction of an active component can result in a loss of isolation or leakage that exceeds limits assumed in the safety analysis. One of these barriers may be a closed system.

2

Containment isolation occurs upon receipt of a high containment pressure signal or a low pressurizer ~~Reactor Coolant System (RCS)~~ pressure signal. The containment isolation signal closes automatic containment isolation valves in fluid penetrations not required for operation of Engineered Safety Feature systems in order to prevent leakage of radioactive material. Upon actuation of safety injection, automatic containment isolation valves also isolate systems not required for containment or RCS heat removal. Other penetrations are isolated by the use of valves in the closed position or blind flanges. As a result, the containment isolation valves (and blind flanges) help ensure that the containment atmosphere will be isolated in the event of a release of radioactive material to containment atmosphere from the RCS following a Design Basis Accident (DBA).

The OPERABILITY requirements for containment isolation valves help ensure that containment is isolated within the time limits assumed in the safety analysis. Therefore, the OPERABILITY requirements provide assurance that the containment function assumed in the accident analysis will be maintained.

(continued)

BASES

BACKGROUND (continued)

The purge valves were designed for intermittent operation, providing a means of removing airborne radioactivity caused by minor RCS leakage prior to personnel entry into containment. There are two sets of purge valves: normal refueling ② purge and exhaust valves and minipurge and exhaust valves. power access purge The normal and minipurge refueling and power access supply and exhaust lines are each supplied with inside and outside containment isolation valves but share common supply and exhaust penetration lines. headers

The normal refueling purge valves are designed for purging the containment atmosphere to the unit stack while introducing filtered makeup from the outside to provide adequate ventilation for personnel comfort when the unit is shut down during refueling operations and maintenance. Motor operated isolation valves are provided inside and outside the containment, and air operated isolation valves are provided outside the containment. ② The valves are operated manually from the control room. The valves will close automatically upon receipt of a containment purge isolation actuation signal and a containment isolation actuation signal. The air operated valves fail closed upon a loss of air. Because of their large size, the normal refueling purge valves in some units are not qualified for automatic closure from their open position under DBA conditions. Therefore, the normal refueling purge valves are normally maintained closed in MODES 1, 2, 3, and 4 to ensure the containment boundary is maintained.

Open normal refueling purge valves, or a failure of the minipurge power access purge valves to close, following an accident that releases contamination to the containment atmosphere would cause a significant increase in the containment leakage rate. ②

APPLICABLE SAFETY ANALYSES

The containment isolation valve LCO was derived from the assumptions related to minimizing the loss of reactor coolant inventory and establishing the containment boundary during major accidents. As part of the containment boundary, containment isolation valve OPERABILITY supports leak tightness of the containment. Therefore, the safety analysis of any event requiring isolation of containment is applicable to this LCO.

The DBAs that result in a release of radioactive material within containment are a loss of coolant accident (LOCA), a

(continued)

BASES a main feedwater line break (2)

APPLICABLE SAFETY ANALYSES (continued)

main steam line break, and a control element assembly ejection accident. In the analysis for each of these accidents, it is assumed that containment isolation valves are either closed or function to close within the required isolation time following event initiation. This ensures that potential paths to the environment through containment isolation valves (including containment purge valves) are minimized. The safety analysis assumes that the normal refueling (2) purge valves are closed at event initiation.

The DBA analysis assumes that, within 60 seconds after the accident, isolation of the containment is complete and leakage terminated except for the design leakage rate, L_a. The containment isolation total response time of 60 seconds includes signal delay, diesel generator startup (for loss of offsite power), and containment isolation valve stroke times.

The single failure criterion required to be imposed in the conduct of unit safety analyses was considered in the original design of the containment purge valves. Two valves in series on each purge line provide assurance that both the supply and exhaust lines could be isolated even if a single failure occurred. The inboard and outboard isolation valves on each line are provided with diverse power sources~~, motor operated and pneumatically operated spring closed, respectively. This arrangement was designed to preclude common mode failures from disabling both valves on a purge line~~. (2)

refueling refueling

The refueling purge valves may be unable to close in the environment following a LOCA. Therefore, each of the refueling purge valves is required to remain sealed closed during MODES 1, 2, 3, and 4. In this case, the single failure criterion remains applicable to the containment refueling purge valves due to failure in the control circuit associated with each valve. Again, the refueling purge system valve design precludes a single failure from compromising the containment boundary as long as the system is operated in accordance with the subject LCO. The ~~mini~~ power access purge valves are capable of closing under accident conditions. Therefore, they are allowed to be open for limited periods during power operation. (2)

The OPERABILITY of main steam safety valves, main steam isolation valves, main feedwater isolation valves, and main steam atmospheric dump valves is covered by Specifications 3.7.1, 3.7.2, 3.7.3 and 3.7.4 respectively. (1)

The containment isolation valves satisfy Criterion 3 of ~~the NRC Policy Statement~~ 10CFR50.36(c)(2)(ii). (1)

(continued)

BASES (continued)

LCO

Containment isolation valves form a part of the containment boundary. The containment isolation valve safety function is related to minimizing the loss of reactor coolant inventory and establishing the containment boundary during a DBA.

The automatic power operated refueling isolation valves are required to have isolation times within limits and to actuate on an automatic isolation signal. The purge valves must be maintained sealed closed [or have blocks installed to prevent full opening]. [Blocked purge valves also actuate on an automatic signal.] The valves covered by this LCO are listed with their associated stroke times in the FSAR UFSAR (Ref. 1). 2 1

The normally closed isolation valves are considered OPERABLE when manual valves are closed, automatic valves are de-activated and secured in their closed position, blind flanges are in place, and closed systems are intact. These passive isolation valves or devices are those listed in Reference 2.

ESF actuated valves are considered OPERABLE when locked, sealed, or otherwise prevented from unintended operation, in their actuated position.

Purge valves with resilient seals [and secondary containment bypass valves] must meet additional leakage rate requirements. The other containment isolation valve leakage rates are addressed by LCO 3.6.1, "Containment," as Type C testing. 2

Each containment isolation valve shall be demonstrated OPERABLE prior to returning the valve to service after maintenance, repair or replacement work is performed on the valve or its associated actuator, control or power circuit.

This LCO provides assurance that the containment isolation valves and purge valves will perform their designed safety functions to minimize the loss of reactor coolant inventory and establish the containment boundary during accidents.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, the containment isolation valves are not required to be OPERABLE in MODE 5. The requirements for containment isolation valves during MODE 6 are addressed in LCO 3.9.3, "Containment Penetrations."

(continued)

BASES (continued)

ACTIONS

Opening of vent, drain, and test connections located between the inboard and outboard CIVs could result in a loss of OPERABILITY for the affected penetration flow path. The appropriate Actions for the associated CIV must be met for these connections.

The ACTIONS are modified by a Note allowing penetration flow paths, except for [42] inch purge valve penetration flow paths, to be unisolated intermittently under administrative controls. These administrative controls consist of stationing a dedicated operator at the valve controls, who is in continuous communication with the control room. In this way, the penetration can be rapidly isolated when a need for containment isolation is indicated. Due to the size of the containment purge line penetration and the fact that those penetrations exhaust directly from the containment atmosphere to the environment, these valves may not be opened under administrative controls. (2)

refueling

A second Note has been added to provide clarification that, for this LCO, separate Condition entry is allowed for each penetration flow path. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable containment isolation valve. Complying with the Required Actions may allow for continued operation, and subsequent inoperable containment isolation valves are governed by subsequent Condition entry and application of associated Required Actions.

The ACTIONS are further modified by a third Note, which ensures that appropriate remedial actions are taken, if necessary, if the affected systems are rendered inoperable by an inoperable containment isolation valve.

A fourth Note has been added that requires entry into the applicable Conditions and Required Actions of LCO 3.6.1 when leakage results in exceeding the overall containment leakage limit.

A.1 and A.2

In the event one containment isolation valve in one or more penetration flow paths is inoperable [except for purge valve leakage ~~and shield building bypass leakage~~ not within limit], the affected penetration flow path must be isolated. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic containment isolation valve, a closed manual valve, a blind (1)

(refer to Action D)

(continued)

BASES

ACTIONS

A.1 and A.2 (continued)

flange, and a check valve with flow through the valve secured. For penetrations isolated in accordance with Required Action A.1, the device used to isolate the penetration should be the closest available one to containment. Required Action A.1 must be completed within the 4 hour Completion Time. The 4 hour Completion Time is reasonable, considering the time required to isolate the penetration and the relative importance of supporting containment OPERABILITY during MODES 1, 2, 3, and 4.

For affected penetration flow paths that cannot be restored to OPERABLE status within the 4 hour Completion Time and that have been isolated in accordance with Required Action A.1, the affected penetration flow paths must be verified to be isolated on a periodic basis. This is necessary to ensure that containment penetrations required to be isolated following an accident and no longer capable of being automatically isolated will be in the isolation position should an event occur. This Required Action does not require any testing or device manipulation. Rather, it involves verification, through a system walkdown, that those isolation devices outside containment and capable of being mispositioned are in the correct position. The Completion Time of "once per 31 days for isolation devices outside containment" is appropriate considering the fact that the devices are operated under administrative controls and the probability of their misalignment is low. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

Condition A has been modified by a Note indicating that this Condition is only applicable to those penetration flow paths with two containment isolation valves. For penetration flow paths with only one containment isolation valve and a closed system, Condition C provides appropriate actions.

Required Action A.2 is modified by a Note that applies to isolation devices located in high radiation areas and allows these devices to be verified closed by use of administrative

(continued)

BASES

ACTIONS

A.1 and A.2 (continued)

means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of these devices, once they have been verified to be in the proper position, is small.

B.1

(refer to Action D)

With two containment isolation valves in one or more penetration flow paths inoperable (except for purge valve leakage ~~and shield building bypass leakage~~ not within limit), the affected penetration flow path must be isolated within 1 hour. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve, a closed manual valve, and a blind flange. The 1 hour Completion Time is consistent with the ACTIONS of LCO 3.6.1. In the event the affected penetration is isolated in accordance with Required Action B.1, the affected penetration must be verified to be isolated on a periodic basis per Required Action A.2, which remains in effect. This periodic verification is necessary to assure leak tightness of containment and that penetrations requiring isolation following an accident are isolated. The Completion Time of once per 31 days for verifying each affected penetration flow path is isolated is appropriate considering the fact that the valves are operated under administrative controls and the probability of their misalignment is low. 1

Condition B is modified by a Note indicating this Condition is only applicable to penetration flow paths with two containment isolation valves. Condition A of this LCO addresses the condition of one containment isolation valve inoperable in this type of penetration flow path.

C.1 and C.2

With one or more penetration flow paths with one containment isolation valve inoperable, the inoperable valve must be restored to OPERABLE status or the affected penetration flow

(continued)

BASES

ACTIONS

C.1 and C.2 (continued)

path must be isolated. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve, a closed manual valve, and a blind flange. A check valve may not be used to isolate the affected penetration. Required Action C.1 must be completed within the [4] hour Completion Time. The specified time period is reasonable, considering the relative stability of the closed system (hence, reliability) to act as a penetration isolation boundary and the relative importance of supporting containment OPERABILITY during MODES 1, 2, 3, and 4. In the event the affected penetration is isolated in accordance with Required Action C.1, the affected penetration flow path must be verified to be isolated on a periodic basis. This is necessary to assure leak tightness of containment and that containment penetrations requiring isolation following an accident are isolated. The Completion Time of once per 31 days for verifying that each affected penetration flow path is isolated is appropriate considering the valves are operated under administrative controls and the probability of their misalignment is low.

Condition C is modified by a Note indicating that this Condition is only applicable to those penetration flow paths with only one containment isolation valve and a closed system. This Note is necessary since this Condition is written to specifically address those penetration flow paths in a closed system. 1.

which are neither part of the reactor coolant pressure boundary nor connected directly to the containment atmosphere (GDC 57)

Required Action C.2 is modified by a Note that applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of these valves, once they have been verified to be in the proper position, is small.

~~D.1~~

~~With the secondary containment bypass leakage rate not within limit, the assumptions of the safety analysis are not~~ 1

(continued)

BASES

ACTIONS

D.1 (continued)

met. Therefore, the leakage must be restored to within limit within 4 hours. Restoration can be accomplished by isolating the penetration(s) that caused the limit to be exceeded by use of one closed and de-activated automatic valve, closed manual valve, or blind flange. When a penetration is isolated, the leakage rate for the isolated penetration is assumed to be the actual pathway leakage through the isolation device. If two isolation devices are used to isolate the penetration, the leakage rate is assumed to be the lesser actual pathway leakage of the two devices. The 4 hour Completion Time is reasonable considering the time required to restore the leakage by isolating the penetration(s) and the relative importance of secondary containment bypass leakage to the overall containment function. 1

D

E.1, E.2, and E.3 1

In the event one or more containment purge valves in one or more penetration flow paths are not within the purge valve leakage limits, purge valve leakage must be restored to within limits, or the affected penetration must be isolated. The method of isolation must be by the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a [closed and de-activated automatic valve with resilient seals, a closed manual valve with resilient seals, or a blind flange]. A purge valve with resilient seals utilized to satisfy Required Action E.1 must have been demonstrated to meet the leakage requirements of SR 3.6.3.6. The specified Completion Time is reasonable, considering that one containment purge valve remains closed so that a gross breach of containment does not exist. D 3

In accordance with Required Action E.2, this penetration flow path must be verified to be isolated on a periodic basis. The periodic verification is necessary to ensure that containment penetrations required to be isolated following an accident, which are no longer capable of being automatically isolated, will be in the isolation position should an event occur. This Required Action does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown, that those

(continued)

BASES

ACTIONS

D D D
~~E~~.1, ~~E~~.2, and ~~E~~.3 (continued)

isolation devices outside containment capable of being mispositioned are in the correct position. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

For the containment purge valve with a resilient ~~resilient~~ D seal that is isolated in accordance with Required Action E.1, SR 3.6.3.6 must be performed at least once every [92] days. This assures that degradation of the resilient seal is detected and confirms that the leakage rate of the containment purge valve does not increase during the time the penetration is isolated. The normal Frequency for SR 3.6.3.6, 184 days, is based on an NRC initiative, Generic Issue B-20 (Ref. 3). Since more reliance is placed on a single valve while in this Condition, it is prudent to perform the SR more often. Therefore, a Frequency of once per [92] days was chosen and has been shown to be acceptable based on operating experience. 1

E
F.1 and F.2 1

If the Required Actions and associated Completion Times are not met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

[SR 3.6.3.1

Each [42] inch containment purge valve is required to be verified sealed closed at 31 day intervals. This Surveillance is designed to ensure that a gross breach of containment is not caused by an inadvertent or spurious] 2

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.3.1 (continued)

opening of a containment purge valve. Detailed analysis of the refueling purge valves failed to conclusively demonstrate their ability to close during a LOCA in time to limit offsite doses. Therefore, these valves are required to be in the sealed closed position during MODES 1, 2, 3, and 4. A containment purge valve that is sealed closed must have motive power to the valve operator removed. This can be accomplished by de-energizing the source of electric power or by removing the air supply to the valve operator. In this application, the term "sealed" has no connotation of leak tightness. The Frequency is a result of an NRC initiative, Generic Issue B-24 (Ref. 4), related to containment purge valve use during unit operations. This SR is not required to be met while in Condition ~~E~~ D of this LCO. This is reasonable since the penetration flow path would be isolated. ② ①

SR 3.6.3.2

This SR ensures that the ~~mini~~ power access purge valves are closed as required or, if open, open for an allowable reason. If a purge valve is open in violation of this SR, the valve is considered inoperable. If the inoperable valve is not otherwise known to have excessive leakage when closed, it is not considered to have leakage outside of limits. The SR is not required to be met when the purge valves are open for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open. The ~~mini~~ power access purge valves are capable of closing in the environment following a LOCA. Therefore, these valves are allowed to be open for limited periods of time. The 31 day Frequency is consistent with other containment isolation valve requirements discussed in SR 3.6.3.3. ②

SR 3.6.3.3

This SR requires verification that each containment isolation manual valve and blind flange located outside containment, and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside the [TSTF-45]

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.3.3 (continued)

containment boundary is within design limits. This SR does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown, that those containment isolation valves outside containment and capable of being mispositioned are in the correct position. Since verification of valve position for containment isolation valves outside containment is relatively easy, the 31 day Frequency is based on engineering judgment and was chosen to provide added assurance of the correct positions. Containment isolation valves that are open under administrative controls are not required to meet the SR during the time the valves are open.

The Note applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, 3, 4 and for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in the proper position, is small.

[TSTF-45]

This SR does not apply to valves that are locked, sealed or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing or securing.

SR 3.6.3.4

This SR requires verification that each containment isolation manual valve and blind flange located inside containment and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside the containment boundary is within design limits. For containment isolation valves inside containment, the Frequency of "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is appropriate, since these containment isolation valves are operated under administrative controls and the probability of their misalignment is low. Containment isolation valves that are open under administrative controls are not required to meet the SR during the time that they are open.

The Note allows valves and blind flanges located in high radiation areas to be verified closed by use of administrative means. Allowing verification by

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.3.4 (continued)

administrative means is considered acceptable, since access to these areas is typically restricted during MODES ~~1, 2, and 3~~ 1, 2, 3, and 4 for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in their proper position, is small. (2)

SR 3.6.3.5

Verifying that the isolation time of each automatic power operated ~~and automatic~~ containment isolation valve is within limits is required to demon.trate OPERABILITY. The isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analysis. *The isolation time and Frequency of this SR are in accordance with the Inservice Testing Program ~~or 92 days~~.* [TSTF-46] (2)

SR 3.6.3.6

For containment purge valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J, Option B (Ref. 5), is required to ensure OPERABILITY. Industry operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than do other seal types. Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between containment and the environment), a Frequency of 184 days was established as part of the NRC resolution of Generic Issue B-20, "Containment Leakage Due to Seal Deterioration" (Ref. 3). (6) (1)

Additionally, this SR must be performed within 92 days after opening the valve. The 92 day Frequency was chosen recognizing that cycling the valve could introduce additional seal degradation (beyond that occurring to a valve that has not been opened). Thus, decreasing the interval (from 184 days) is a prudent measure after a valve has been opened.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.3.7

Automatic containment isolation valves close on a containment isolation signal to prevent leakage of radioactive material from containment following a DBA. This SR ensures each automatic containment isolation valve will actuate to its isolation position on a ~~containment isolation~~ actual or simulated actuation signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The [18] month Frequency was developed considering it is prudent that this SR be performed only during a unit outage, since isolation of penetrations would eliminate cooling water flow and disrupt normal operation of many critical components. Operating experience has shown that these components usually pass this SR when performed on the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint. 1

~~SR 3.6.3.8~~

~~Reviewer's Note: This SR is only required for those units with resilient seal purge valves allowed to be open during [MODE 1, 2, 3, or 4] and having blocking devices on the valves that are not permanently installed.~~

~~Verifying that each [42] inch containment purge valve is blocked to restrict opening to ≤ [50]% is required to ensure that the valves can close under DBA conditions within the times assumed in the analyses of References 2 and 3. If a LOCA occurs, the purge valves must close to maintain containment leakage within the valves assumed in the accident analysis. At other times when purge valves are required to be capable of closing (e.g., during movement of irradiated fuel assemblies), pressurization concerns are not present, thus the purge valves can be fully open. The [18] month Frequency is appropriate because the blocking devices are typically removed only during a refueling outage.~~ 2

~~SR 3.6.3.9~~

~~This SR ensures that the combined leakage rate of all secondary containment bypass leakage paths is less than or~~

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.3.9 (continued)

equal to the specified leakage rate. This provides assurance that the assumptions in the safety analysis are met. The leakage rate of each bypass leakage path is assumed to be the maximum pathway leakage (leakage through the worse of the two isolation valves) unless the penetration is isolated by use of one closed and de-activated automatic valve, closed manual valve, or blind flange. In this case, the leakage rate of the isolated bypass leakage path is assumed to be the actual pathway leakage through the isolation device. If both isolation valves in the penetration are closed, the actual leakage rate is the lesser leakage rate of the two valves. This method of quantifying maximum pathway leakage is only to be used for this SR (i.e., Appendix J maximum pathway leakage limits are to be quantified in accordance with Appendix J). The Frequency is required by 10 CFR 50, Appendix J, as modified by approved exemptions (and therefore, the Frequency extensions of SR 3.0.2 may not be applied), since the testing is an Appendix J, Type C test. This SR simply imposes additional acceptance criteria.

[Bypass leakage is considered part of L_a. [Reviewer's Note: Unless specifically exempted].]

2

REFERENCES

UFSAR

1. ~~FSAR~~, Section ~~[ ]~~. 6.2.4
2. ~~FSAR~~, Section ~~[ ]~~. 6.2.6
3. Generic Issue B-20.
4. Generic Issue B-24.
5. 10 CFR 50, Appendix J, Option B.

NUREG-1432 EXCEPTIONS
SPECIFICATION 3.6.3

1. Grammar and/or editorial changes have been made to enhance clarity. No technical or intent changes to the Specification are made by this change.

2. The plant specific titles, nomenclature, number, parameter/value, reference, system description, system design, operating practices or analysis description was used (additions, deletions, and/or changes are included). Plant specific parameters/values were directly transferred from the CTS to the ITS.

3. NUREG-1432 LCO 3.6.3 Required Action E.1 lists closed manual valve with resilient seals as an acceptable device for isolating a containment purge penetration with an inoperable purge valve. PVNGS design does not contain manual valves with resilient seals; therefore, this device has been removed from ITS LCO 3.6.3 Required Action D.1. This change is consistent with current plant design and licensing basis.

4. NUREG-1432 SR 3.6.3.3 and SR3.6.3.4 require verification of CIV position for valves which are required to be closed during accident conditions. ITS SR 3.6.3.3 and SR 3.6.3.4 do not require this verification for valves which are locked, sealed or otherwise secured in position. This change is acceptable since the position of these valves are verified administratively prior to locking sealing or securing in position. This change makes the verification of CIVs consistent with verification of valve position for system specific Specifications. This change is consistent with TSTF-45 which has been approved by the NRC.

5. NUREG-1432 SR 3.6.3.5 requires verification that the isolation time of each power operated and each automatic containment isolation valve is within its limits. ITS SR 3.6.3.5 only requires the isolation time be verified for each automatic power operated containment isolation valve. The ITS does not require verification of isolation time for power operated valves which are not automatically actuated. The Bases for this SR states that the, "(isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analysis. " There may be valves credited as containment isolation valves which are power operated (i.e., can be remotely operated) that do not receive a containment isolation signal (e.g., a GDC 57 penetration). These power operated valves do not have an isolation time as assumed in the accident analyses since they require operator action. Therefore, deleting reference to power operated valve isolation time testing reduces the potential for misinterpreting the requirements of this SR while maintaining the assumptions of the accident analysis. This change is consistent with TSTF-46 which has been approved by the NRC.

6. ITS SR 3.6.3.6 has been revised to reflect implementation of 10CFR50. Appendix J. Option B. This change is consistent with current licensing basis and is consistent with the guidlines provided by the NRC for incorporation of Option B in the Improved Technical Specifications.

PVNGS CTS
SPECIFICATION 3.6.3
MARK UP

Specification 3.6.3
(3.6.1/3.6.3)

A.1

3.6 ~~3/4.6~~ CONTAINMENT SYSTEMS

3.6.3 ~~3/4.6.1 PRIMARY~~ CONTAINMENT ISOLATION VALVES

~~CONTAINMENT INTEGRITY~~

~~LIMITING CONDITION FOR OPERATION~~

3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

Without primary CONTAINMENT INTEGRITY, restore CONTAINMENT INTEGRITY within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ITS 3.6.1 SURVEILLANCE REQUIREMENTS L.1

ITS 3.6.3

~~4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated:~~ NOTE: Isolation devices in high radiation areas may be verified by use of administrative means.

ACT A.2
ACT C.2
ACT D.2
SR 3.6.3.3
ITS 3.6.3 ACT NOTE 1

~~a.~~ At least once per 31 days by verifying that all penetrations* not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions except for valves that are open under administrative control as permitted by Specification 3.6.3. A.2

ITS 3.6.1

b. By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3.

c. After each closing of each penetration subject to Type B testing, except containment air locks, if opened following a Type A or B test, by leak rate testing in accordance with the Containment Leakage Rate Testing Program.

ITS 3.6.1

ITS 3.6.3

NOTE: Isolation devices in high radiation areas may be verified by use of administrative means. L.1

SR 3.6.3.4
ACT A.2
ACT D.2

*Except valves, blind flanges, and deactivated automatic valves which are located inside the containment ~~and are locked, sealed, or otherwise secured in the closed position~~. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than once per 92 days. L.6

SR 3.6.3.3 Valves which are locked, sealed or otherwise
SR 3.6.3.4 secured are not required to be Surveilled. L.7

[TSTF-45]

(A.1)

(3.6) CONTAINMENT SYSTEMS

(3.6.3) CONTAINMENT ~~VENTILATION SYSTEM~~ ISOLATION VALVES

~~LIMITING CONDITION FOR OPERATION~~

(3.6.3) ~~3.6.1.7~~ Each containment ~~purge supply and exhaust~~ isolation valve shall be OPERABLE ~~and:~~

<SR3.6.3.1>
<SR3.6.3.2>

a. Each 42-inch containment purge supply and exhaust isolation valve shall be sealed closed.

(A.1)

b. The 8-inch containment purge supply and exhaust isolation valves shall be sealed closed to the maximum extent practicable but may be open for purge system operation for pressure control, for ALARA and respirable air quality considerations for personnel entry and for surveillance tests that require the valve to be open.

APPLICABILITY: MODES 1, 2, 3, and 4. Inserts 1 and 2

ACTION: One or more penetration flow paths (A.8) Insert 5

(ACT A.1) ~~a.~~ With a ~~42-inch~~ containment ~~purge supply and/or exhaust~~ isolation valve~~(s) open or not sealed closed~~, ~~close and/or seal close the open valve(s) or~~ isolate the ~~penetration~~ within 4 hours, otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. (A.9)

(ACT E) Insert 5 Insert 3

(ACT A.1) ~~b.~~ With an ~~8-inch~~ containment ~~purge supply and/or exhaust~~ isolation valve~~(s) open for reasons other than given in 3.6.1.7.b above, close the open 8-inch valve(s) or~~ isolate the ~~penetration(s)~~ ~~within 4 hours,~~ otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. (A.1) (A.9)

(ACT E) Insert 3

(ACT D.1) ~~c.~~ ~~With a~~ containment purge ~~supply and/or exhaust isolation~~ valve(s) ~~having a measured leakage rate~~ exceeding the limits of Specifications 4.6.1.7.2 and/or 4.6.1.7.3, ~~restore the inoperable valve(s) to OPERABLE status or~~ isolate the ~~penetrations~~ ~~such~~ that the measured leakage rate does not exceed the limits of Specifications 4.6.1.7.2 and/or 4.6.1.7.3 ~~within 24 hours,~~ otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. (A.9) Insert 4 verify once per 92 days (M.1)

One or more penetration flow paths with one or more (A.8)

(ACT D.3)

(ACT E)

SURVEILLANCE REQUIREMENTS (A.10)

(SR3.6.3.1) ~~4.6.1.7.1~~ Each 42-inch ~~containment~~ purge ~~supply and exhaust isolation~~ valve shall be verified to be sealed closed except for one purge valve in a penetration flow path while in Condition D of this LCO. at least once per 31 days.

(Insert 1)

(SR3.6.3.6) ~~4.6.1.7.2~~ At least once per ~~6 months on a STAGGERED TEST BASIS each sealed closed 42-inch~~ containment purge ~~supply and exhaust isolation~~ valve with resilient material seals shall be demonstrated OPERABLE by verifying that the measured leakage rate is less than or equal to 0.05 L_a when pressurized to P_a. leakage rate tested (LA.2)

(Insert 1)

(SR3.6.3.6) ~~4.6.1.7.3~~ At least once per ~~92 days each 8-inch~~ containment purge ~~supply and exhaust isolation~~ valve with resilient material seals shall be demonstrated OPERABLE by verifying that the measured leakage rate is less than or equal to 0.01 L_a when pressurized to P_a.

(L.5)

(SR3.6.3.2) ~~4.6.1.7.4~~ Each 8-inch containment purge supply and exhaust isolation valve shall be verified to be ~~sealed~~ closed ~~or~~ open in accordance with specification 3.6.1.7.b at least once per 31 days. except if

INSERT FOR CTS 3.6.1.7 MARKUP
ACTION SECTION

INSERT 1

-------------------------NOTES APPLICABLE TO ALL ACTIONS-------------------------

1. Penetration flow paths, except for 42 inch purge valve penetration flow paths may be unisolated intermittently under administrative controls. A.12
2. Separate Condition entry is allowed for each penetration flow path. A.3
3. Enter applicable Conditions and Required Actions for system(s) made inoperable by containment isolation valves. A.4
4. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when leakage results in exceeding the overall containment leakage rate acceptance criteria. A.5

INSERT 2

-------------------------NOTE FOR CONDITION A-------------------------

Only applicable to penetration flow paths with two containment isolation valves. A.6

INSERT 3

... affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured ... A.13

INSERT 4

... affected penetration flow path by use of at least one closed and de-activated automatic valve with resilient seals, or blind flange within 24 hours, ... A.13

INSERT 5

... inoperable, except for purge valve leakage not within limits, ... A.14

INSERT FOR CTS 3.6.1.7 MARKUP
SURVEILLANCE REQUIREMENTS SECTION

INSERT 1

... 184 days and within 92 days after opening the valve, ... L.2 M.3

3.6.3
Action A
markup

Specification 3.6.3
(3.6.3/3.7.3)

A.1

3.6 CONTAINMENT SYSTEMS

3.6.3 ~~3/4.6.3~~ CONTAINMENT ISOLATION VALVES

~~LIMITING CONDITION FOR OPERATION~~

LCO3.6.3 ~~3.6.3~~ Each containment isolation valve shall be OPERABLE.*

-----NOTE-----
Only applicable to penetration flowpaths with two containment isolation valves. (A.6)

APPLICABILITY: MODES 1, 2, 3, and 4.

Insert 1

ACTION: One or more penetration flow paths with one containment isolation valve inoperable except for purge valve leakage not within limits. (A.14)

~~1.~~ ~~With one or more of the isolation valve(s) inoperable, maintain at least one isolation valve OPERABLE in each affected penetration that is open and either:~~

~~a. Restore the inoperable valve(s) to OPERABLE status within 4 hours, or~~ (A.9)

ACT A ~~b.~~ Isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve ~~secured~~ in the ~~isolation~~ closed position~~**~~; or (M.2)

ACT B ~~c.~~ Isolate the affected penetration within 4 hours by use of at least one closed manual valve or blind flange~~**;~~ or check valve with flow through the valve secured; or (A.16)

Insert 2

ACT E ~~d.~~ Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

~~e. The provisions of Specification 3.0.4 do not apply.~~ (A.17)

SURVEILLANCE REQUIREMENTS

~~4.6.3.1 Each containment isolation valve shall be demonstrated OPERABLE prior to returning the valve to service after maintenance, repair, or replacement work is performed on the valve or its associated actuator, control, or power circuit.~~ (LA.4)

~~4.6.3.2 Each isolation valve used in containment isolation, containment spray, or containment purge shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least~~ once per 18 months by: (L.3) or actual automatic containment

SR3.6.3.7 ~~a.~~ Verify~~ing~~ that on a ~~CIAS, CSAS or SIAS~~ test signal, each isolation valve that is not locked, sealed or otherwise secured in position, actuates to its isolation position. (L.4)

SR3.6.3.7 ~~b. Verifying that on a CPIAS test signal, all containment purge valves actuate to their isolation position.~~

ACTION NOTE 1 ~~*~~Locked or sealed closed valves may be opened on an intermittent basis under administrative control.

ACTION NOTE 3 ~~**~~The inoperable isolation valve(s) may be part of a system(s). Isolating the affected penetration(s) may affect the use of the system(s). Consider the technical specification requirements on the affected system(s) and act accordingly. (A.4)

INSERT FOR CTS 3.6.3 MARKUP
ACTION SECTION

INSERT 1

--------------------------------NOTES APPLICABLE TO ALL SECTIONS---------------------------

2. Separate Condition entry is allowed for each penetration flow path. A.3
3. Enter applicable Conditions and Required Actions for system(s) made inoperable by containment isolation valves. A.4
4. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when leakage results in exceeding the overall containment leakage rate acceptance criteria. A.5

INSERT 2

---NOTE---

Only applicable to penetration flow paths with two containment isolation valves. A.6

With one or more penetration flow paths with two containment isolation valves inoperable except for purge valve leakage not within limits, isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange within one hour. L.9

3.6.3
ACTION C
markup

Specification 3.6.3
(3.6.3/3.7.3)

3.6 CONTAINMENT SYSTEMS

3.6.3 ~~3/4.6.3~~ CONTAINMENT ISOLATION VALVES

~~LIMITING CONDITION FOR OPERATION~~

LCO 3.6.3 Each containment isolation valve shall be OPERABLE.*

- - - - - - - Note - - - - - -
Only applicable to penetration flow paths with only one containment isolation valve and a closed system
- - - - - - - - - - - - - - - A.6

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION: Penetration flow paths with one containment

ACTC

~~1.~~ ~~With~~ one or more ~~of the~~ isolation valve~~(s)~~ inoperable, ~~maintain at least one isolation valve OPERABLE in each affected penetration that is open and either:~~

~~a. Restore the inoperable valve(s) to OPERABLE status within 4 hours,~~ A.9 or

~~b.~~ Isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve ~~secured~~ in the ~~isolation~~ closed position~~**~~, or M.2

~~c.~~ Isolate the affected penetration within 4 hours by use of at least one closed manual valve or blind flange~~**; or~~

~~d. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~

~~e. The provisions of Specification 3.0.4 do not apply.~~

~~SURVEILLANCE REQUIREMENTS~~

~~4.6.3.1 Each containment isolation valve shall be demonstrated OPERABLE prior to returning the valve to service after maintenance, repair, or replacement work is performed on the valve or its associated actuator, control, or power circuit.~~

SEE 3.6.3 ACTION A markup

~~4.6.3.2 Each isolation valve used in containment isolation, containment spray, or containment purge shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by:~~

~~a. Verifying that on a CIAS, CSAS or SIAS test signal, each isolation valve actuates to its isolation position.~~

~~b. Verifying that on a CPIAS test signal, all containment purge valves actuate to their isolation position.~~

~~*Locked or sealed closed valves may be opened on an intermittent basis under administrative control.~~

~~**The inoperable isolation valve(s) may be part of a system(s). Isolating the affected penetration(s) may affect the use of the system(s). Consider the technical specification requirements on the affected system(s) and act accordingly.~~

Specification 3.6.3
(3.6.3 / 5.0)

3.6 CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

automatic · containment isolation L8

SR3.6.3.5 ~~4.6.3.3~~ The isolation time of each power operated ~~or automatic~~ valve ~~used in CIAS, CPIAS, or CSAS~~ shall be determined to be within its limit when tested ~~pursuant to Specification 4.0.5.~~ in accordance with the Inservice Testing Program. A.15

ITS 3.6.3

ITS 5.0 4.6.3.4 The containment isolation check valves shall be demonstrated OPERABLE in accordance with the Containment Leakage Rate Testing Program.

4.6.3.5 The containment isolation valves used as safety/relief, normally open—ESF actuated closed, or required open during accident conditions shall be demonstrated OPERABLE as required by Specification 4.0.5 and the Surveillance Requirements associated with those Limiting Conditions for Operation

ITS 5.0 pertaining to each valve or system in which it is installed.

ITS 3.6.3 Valves secured*** in their actuated position are considered operable pursuant to this specification. LA3

4.6.3.6 The manual containment isolation valves (normally closed/post accident closed valves) shall be demonstrated OPERABLE pursuant to Surveillance Requirement 4.6.1.1.a of Specification 3.6.1.1. A.11

*Locked, sealed, or otherwise prevented from unintentional operation. LA3

DISCUSSION OF CHANGES
SPECIFICATION 3.6.3

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering is in accordance with the Combustion Engineering Plant (CEOG) Standard Technical Specifications NUREG-1432, Rev. 1 (NUREG-1432). As a result, the Palo Verde Nuclear Generating Station (PVNGS) Improved Technical Specifications (ITS) should be more readable, and therefore understandable, by plant operators as well as other users. During the reformatting and renumbering of the ITS, no technical changes (either actual or interpretational) to the Current Technical Specification (CTS) were made unless they were identified and justified.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During NUREG-1432 development, certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or interpretational) to the CTS.

Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more detail does not result in a technical change.

A.2 CTS 4.6.1.1 .a states in part, "... verifying that all penetrations* not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions ...." The asterisk refers to a note which states, "Except valves, blind flanges, and deactivated automatic valves which are located in the containment and are locked, sealed, or otherwise secured in the closed position. These penetrations shall be verified closed ... ." ITS SR 3.6.3.3 states in part, "Verify each containment isolation valve and blind flange that is located outside containment and is required to be closed during accident conditions is closed ... ." ITS SR 3.6.3.4 states in part, "Verify each containment isolation manual valve and blind flange that is located inside containment and required to be closed during accident conditions is closed ... ." CTS 4.6.1.1.a requires Surveillance of automatic valves secured in position to comply with Actions in addition to other valves and blind flanges which are required to be normally closed during operation. ITS SR 3.6.3.3 and SR 3.6.3.4 only require Surveillance of containment isolation manual valves and blind flanges which are required to be closed during accident conditions. Removing the requirement from SRs for verification of position for valves closed to comply with Actions is acceptable since these verifications are now required by ITS LCO 3.6.3 Required Action A.2, Required Action C.2, and Required Action D.2.

ADMINISTRATIVE CHANGES (continued)

A.2 (continued)

Placing these verifications in an ITS SR is not appropriate since ITS SR 3.0.1 states in part, "... Surveillances do not have to be performed on inoperable equipment ... ." Relocating these verifications from a SR to an Action does not impact safety. This change is consistent with NUREG-1432.

A.3 Applicable CTS Actions are not modified by Notes which allow separate condition entry. ITS LCO 3.6.3 Actions are modified by a note which states, "Separate Condition entry is allowed for each penetration flow path. The use of the word "each" instead of "all" in the CTS implies that separate condition entry is allowed; e.g., "Isolate each affected penetration within 4 hours ...," vice isolate all penetrations within 4 hours. Separate treatment of penetration flow paths is acceptable since penetration flow paths do not function as a system but function independently of each other. The Actions specified for each inoperable flow path are sufficient to provide the required level of safety. This change does not impact safety and is consistent with NUREG-1432.

A.4 CTS 3.6.3 Action 1.b and Action 1.c are modified by a double asterisk which refers to a note which states, "The inoperable isolation valve(s) may be part of a system(s). Isolating the affected penetration(s) may affect the use of the systems(s). Consider the technical specification requirements on the affected system(s)and act accordingly." ITS LCO 3.6.3 Actions are modified by a Note which states, "Enter applicable Conditions and Required Actions for system(s) made inoperable by containment isolation valves." The Note contained in CTS 3.6.3 does not direct entry into the Conditions and Required Actions of the affected system TS but states to consider the TS requirements on the affected system and act accordingly. If the affected system is made inoperable by the inoperable CIV, the Conditions and Required Actions must be entered. Rewording this note to provide clarification that Actions are to be complied with for inoperable systems merely reinforces the existing requirements contained in the LCO Applicability Specifications. This change does not impact safety and is consistent with NUREG-1432.

ADMINISTRATIVE CHANGES (continued)

A.5 CTS 3.6.3 Actions do not reference CTS 3.6.1.1 Containment Integrity or CTS 3.6.1.2 Containment Leakage for Actions to be taken if the leakage rate of a penetration flow path(s) results in violating CONTAINMENT INTEGRITY. ITS LCO 3.6.3 Action Note 4 refers to the applicable Conditions and Required Actions of ITS LCO 3.6.1 when valve leakage rates result in exceeding the overall containment leakage rate acceptance criteria. Although there is no explicit reference to CTS 3.6.1.1 or CTS 3.6.1.2, the requirements still apply and the impact of other LCOs and Surveillances must be evaluated. This note does not alter any existing requirements and only serves to remind the licensee that other specifications may be affected. This clarifying note has no impact on safety. This change is consistent with NUREG-1432.

A.6 CTS 3.6.1.1, CTS 3.6.1.7, and CTS 3.6.3 do not separate Actions for penetrations with two CIVs and penetrations with a closed system inside containment and one CIV. ITS LCO 3.6.3 Action A, and ITS LCO 3.6.3 Action B are modified by Notes which state, "Only applicable to penetration flow paths with two containment isolation valves." ITS LCO 3.6.3 Action C is modified by a Note which states, "Only applicable to penetration flow paths with only one containment isolation valve and a closed system." The Actions contained the CTS are worded such that they apply to both types of penetrations. The Actions contained in ITS LCO 3.6.3 have been changed to apply to specific types of penetrations. Addition of clarifying Notes specifying which Actions are applicable to each type of penetration does not impact safety. See applicable DOCs for discussion of changes to individual Actions. This change is consistent with NUREG-1432.

A.7 NOT USED

A.8 CTS 3.6.1.7 Action a states in part, "With a 42-inch containment purge supply and/or exhaust isolation valve(s) open or not sealed closed ... ." CTS 3.6.1.7 Action b states in part, "With an 8-inch containment purge supply and/or exhaust isolation valve(s) open ... ." CTS 3.6.1.7 Action c states in part, "With a containment purge supply and/or exhaust isolation valve(s) having a measured leakage rate exceeding the limits ... ." ITS LCO 3.6.3 Action A, and Action D apply to one or more penetration flow paths with inoperable CIVs. Since the CTS Actions refer to "... containment purge supply and/or exhaust isolation valve(s), they apply to one or more penetrations. Rewording the Condition to enhance clarity does not alter the requirements of the Specification. This change does not impact safety and is consistent with NUREG-1432.

ADMINISTRATIVE CHANGES (continued)

A.9 The CTS contains various Actions which either state explicitly to restore OPERABILITY or whose performance constitutes restoration of OPERABILITY (e.g., closing and sealing closed a purge valve which is required to be sealed closed by the LCO). Actions for restoration of OPERABILITY have typically been omitted from the ITS. ITS LCO 3.0.2 states, "If the LCO is met or is no longer applicable prior to expiration of the specified completion time(s), completion of the Required Action(s) is not required, unless otherwise stated." The Bases for ITS LCO 3.0.2 states, "Whether stated as a Required Action or not, correction of the entered condition is an action that may always be considered upon entering ACTIONS." The option of restoring OPERABILITY is already provided generically by ITS LCO 3.0.2, therefore it need not be restated in the individual specifications. Removing Actions to restore OPERABILITY does not impact safety. This change is consistent with NUREG-1432.

A.10 CTS 4.6.1.7.1 states, "Each 42-inch containment purge supply and exhaust isolation valve shall be verified to be sealed closed at least once per 31 days." ITS SR 3.6.3.1 states, "Verify each 42 inch purge valve is sealed closed except for one purge valve in a penetration flow path while in Condition D of this LCO." ITS LCO 3.6.3 Condition D is for purge valves not within leakage limits. ITS LCO 3.6.3 Action D requires the penetration flow path to be isolated. within 24 hours and verified to be isolated every 31 days for devices outside containment and prior to entering Mode 4 from Mode 5 if not performed within the previous 92 days for valves located inside containment. With the penetration flow path isolated and verified on a periodic basis, it is reasonable not to require a Surveillance to verify the purge valves are also performing that function. CTS 3.6.1.7 Action c also requires isolating the penetration with purge valve leakage not within limits. CTS 4.0.3 states that Surveillances do not have to be performed on inoperable equipment. If the penetration is isolated to comply with CTS 3.6.1.7 Action c, then CTS 4.6.1.1 requires verification every 31 days that the penetration remains isolated. There is no change to plant operation due to this change. This change does not impact safety and is consistent with NUREG-1432.

A.11 CTS 4.6.3.6 requires that manual isolation valves be demonstrated Operable in accordance with CTS 4.6.1.1. This cross reference is removed from ITS 3.6.3. Cross references are not used in the ITS or NUREG-1432. Removing cross references does not alter the requirements of the referenced Specification. Therefore, this is an administrative change with no impact on safety. This change is consistent with NUREG-1432.

ADMINISTRATIVE CHANGES (continued)

A.12 CTS 3.6.3 contains an asterisk which states that locked or sealed closed valves may be opened on an intermittent basis under administrative controls. ITS LCO 3.6.3 Actions are modified by a Note which states that penetration flow paths except for the 42 inch purge valve penetration flow paths may be unisolated intermittently under administrative controls. The requirements for purge valve Operability are contained in a separate Specification from other CIVs in the CTS. The purge valve Specification allows unisolating the 8 inch purge penetrations but does not allow the 42 inch purge penetrations to be unisolated. This change does not impact safety and is consistent with NUREG-1432.

A.13 CTS 3.6.1.7 Action a, Action b, and Action c require isolation of the penetration with one or more purge valve inoperable but do not list the acceptable devices for isolation. ITS LCO 3.6.3 Required Actions A.1 and D.1 list the acceptable devices for isolation of the penetration flow path. The only means available at PVNGS to isolate these penetrations are blind flanges or the Operable isolation valve in the flow path. Both of these devices are allowed by ITS LCO 3.6.3. This change does not impact safety and is consistent with NUREG-1432.

A.14 CTS 3.6.1.7 Action a and Action b require isolation of containment purge penetrations on which the purge valves are not sealed closed as required. CTS 3.6.3 Action 1 contains requirements for penetrations with one or more CIV inoperable. ITS LCO 3.6.3 Action A contains similar requirements but the Condition is modified to state that it is not applicable for purge valve leakage not within limit. With purge valve leakage not within limit, CTS 3.6.1.7 Action c and ITS LCO 3.6.3 Action D apply. Adding a clarifying statement directing users to the appropriate Action does not alter the intent or the application of the Specifications. This change does not impact safety and is consistent with NUREG-1432.

A.15 CTS 4.6.3.3 requires testing of Containment Spray System automatic valves in accordance with CTS Specification 4.0.5. SR 3.6.3.5 requires that these valves be tested in accordance with the Inservice Testing Program. The requirements for ASME Section XI pump and valve testing which were contained in CTS 4.0.5 have been moved to an administrative program described in ITS 5.5.8. Refer to discussion of changes for ITS 5.5.8 for a description of changes to the program. This change does not impact safety and is consistent with NUREG-1432.

ADMINISTRATIVE CHANGES (continued)

A.16 With one isolation valve inoperable in a penetration with two or more isolation valves, CTS 3.6.3 Actions allow isolating the penetration with a deactivated automatic valve, a closed manual valve or a blind flange. In addition to the isolation devices allowed in CTS 3.6.3, ITS LCO 3.6.3 Action A allows the use of a check valve with flow through the valve secured to be used as an isolation device. This change is acceptable because check valves are considered to be automatic valves. By securing flow through the valve, the motive force for opening the valve is removed similar to removing electrical, pneumatic or hydraulic power for other deactivated automatic valves. 10CFR50, Appendix A, GDC 55 allows the use of check valves as automatic valves inside containment. This change does not impact safety and is consistent with NUREG-1432.

A.17 CTS 3.6.3 Action 1.e states that the provisions of Specification 3.0.4 do not apply. CTS 3.0.4 prohibits changing MODES when the LCO is not met. ITS 3.6.3 does not require an exemption from the requirements of Specification LCO 3.0.4 because operation is allowed for an unlimited time under the ACTIONS. There is no change in the level of safety since the specified Actions assure the required level of safety is maintained. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 CTS 3.6.1.7 Action c requires that a penetration with one or more purge valve(s) exceeding leakage limits be isolated such that the leakage limits of CTS 4.6.1.7.2 or 4.6.1.7.3 are not exceeded. CTS 4.6.1.7.2 requires that the 42" purge valves be tested once per 6 months. ITS LCO 3.6.3 Action D.3 requires that leakage rate testing be performed at least once every 92 days for purge valves with resilient seals which are used to isolate penetrations with one or more purge valves exceeding the leakage limit. This change is made because of the increased reliance placed on a single valve operating in this condition. The addition of this requirement constitutes a more restrictive change to PVNGS current plant operation. This change is consistent with NUREG-1432.

M.2 CTS 3.6.3 Action 1.b requires isolating each penetration with one or more inoperable CIVs by use of at least one deactivated automatic valve secured in the isolation position. ITS LCO 3.6.3 Action A and Action C require that deactivated automatic valves be secured in the closed position. Current PVNGS practice is to consider all valves listed in Section 6.2.4 of the UFSAR as containment isolation valves. Many of these valves are ESF automatic valves which do not receive a CIAS and are required open post-accident. PVNGS current operating practice is to secure these valves in the open position when inoperable since that is the isolation position. ITS 3.6.3 Action A and Action C requires that valves be closed to be considered in the isolation position. The Bases provides additional clarification regarding the definition of a CIV. The addition of this requirement constitutes a more restrictive change to PVNGS current operating practices. This change is consistent with NUREG-1432.

M.3 CTS 4.6.1.7.2 requires leakage rate testing of the 42" containment purge isolation valves at least once per 6 months. ITS SR 3.6.3.6 requires leakage rate testing every 184 days and within 92 days after opening. These valves are only allowed to be open in Modes 5, 6 and defueled. It is consistent with current operating practice to leakage rate test these valves prior to entry into Mode 4 if opened. This change does not impact safety and is consistent with NUREG-1432.

TECHNICAL CHANGES - RELOCATIONS

LA.1 NOT USED

LA.2 CTS 4.6.1.7.2 and CTS 4.6.1.7.3 contain details of purge valve leakage rate acceptance criteria. Purge valve leakage is a component of containment Operability .These details have therefore been relocated to the Containment Leakage Rate Testing Program.

Any change to the requirements in the Containment Leakage Rate Testing Program will be governed by the provisions of ITS 5.5, 10CFR50 Appendix J and 10CFR50.59. This provides an equivalent level of control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement is acceptable and is consistent with NUREG-1432.

LA.3 CTS 4.6.3.5 states that valves which are secured in their actuated position are considered Operable. When containment isolation valves are closed, they are capable of fulfilling their safety function and are therefore considered Operable as long as they are secured from unintended operation. When ESF actuated valves are secured (locked, sealed or otherwise prevented from unintentional operation) in their actuated position, they are considered OPERABLE. This includes containment isolation valves used as safety/relief, normally open-ESF actuated closed, and required open during accident conditions. This requirement is not required to determine the OPERABILITY of a system, component or structure and therefore is being relocated to the Bases.

Any change to the requirements in the Bases will be governed by the provisions the Technical Specification Bases Control Program. This provides an equivalent level of control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement to the Bases is acceptable and is consistent with NUREG-1432.

TECHNICAL CHANGES - RELOCATIONS (continued)

LA.4 CTS 4.6.3.1 requires each containment isolation valve to be demonstrated Operable after maintenance. Maintenance activities and retests after maintenance are controlled by the PVNGS work control process. This work control process contains adequate controls to assure that the necessary Surveillance Testing as well as performance testing takes place after maintenance. This requirement is not required to determine the OPERABILITY of a system, component or structure and therefore is being relocated to the Bases.

Any change to the requirements in the Bases will be governed by the provisions of 10 CFR 50.59 and the Technical Specification Bases Control Program. This provides an equivalent level of control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement to the plant procedures is acceptable and is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE

L.1 CTS 4.6.1.1.a requires verification that manual valves, blind flanges and deactivated automatic valves which are relied upon for containment isolation are properly positioned and secured. ITS LCO 3.6.3 Actions A.2, C.2, E.2, SR 3.6.3.3 and SR 3.6.3.4 also require verification of containment isolation manual valves, blind flanges and deactivated automatic valves except that the requirements are modified by Notes which allow the verification to be performed by administrative means if the isolation device is located in a high radiation area. Performing verification of position and securing of isolation devices by administrative means is acceptable since access to high radiation areas is restricted. Review of approximately 150 Commitment Action Tracking System records indicates that the probability of misalignment of the devices once they have been verified to be in the correct position is minimal. This change does not impact safety and is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

L.2 CTS 4.6.1.7.2 requires leakage rate testing of the 42" containment purge isolation valves at least once per 6 months on a Staggered Test Basis. ITS SR 3.6.3.6 requires leakage rate testing every 184 days AND within 92 days after opening the valve. Deleting the requirement to test on a Staggered Test Basis is considered a less restrictive change. The reason for the Staggered Test Basis is to prevent testing all the same components at the same time which could cause a total loss of function and/or perturbation in plant operation. The two containment purge penetrations function independently of each other during Modes 1 through 4. There is no increased potential for plant perturbations or loss of function due to testing both penetrations simultaneously. This change does not impact safety and is consistent with NUREG-1432.

CTS 4.6.1.7.3 requires leakage rate testing of the 8" containment purge valves once per 92 days. ITS SR 3.6.3.6 requires leakage rate testing of the 8" containment purge valves every 184 days AND within 92 days after opening. The change in frequency from once per 92 days to once per 184 days is acceptable since there is no reason to believe that the seals on the 8" purge valves would degrade from environmental causes any faster than the seals on the 42" purge valves. The 8" purge valves are cycled more frequently than the 42" purge valves, but the requirement to test within 92 days after opening will detect increased degradation due to operation. This change does not reduce the margin of safety since increased seal degradation due to cycling of the valves will be detected by the test required within 92 days after opening. These changes in SR Frequency are consistent with NUREG-1432.

L.3 CTS 4.6.3.2 requires verification of automatic valve actuation using a test signal. ITS allows verification using an actual or simulated actuation signal instead of just a test signal. This change allows PVNGS to take credit for CIV SRs if actuation occurs in the event an actual actuation signal is received. In this case, if an actual signal is received and the appropriate CIVs properly actuate per the safety analysis, there would be no need to perform the SRs at the original 18 month interval. PVNGS would have the option to either start the SR frequency from receipt of the actual actuation or to retest the CIVs as originally scheduled. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal. This change does not impact safety and is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

L.4 SR 4.6.3.2 requires verification that automatic CIVs actuate to the required position upon receipt of an actuation signal. ITS SR 3.6.3.7 only requires this Surveillance to be performed for valves which are not locked, sealed or otherwise secured in position. This change is acceptable since valves secured in the closed position are considered Operable. Valves which are secured in the open position are controlled administratively by the PVNGS locked valve, breaker, and component control process. ITS LCO 3.6.3 Actions are modified by a Note which allows valves to be open under administrative controls. Testing only those valves which are not secured in position is acceptable because the controls placed on valves which aresecured in position are adequate to assure they will be capable of performing their safety function. This change is consistent with NUREG-1432.

L.5 CTS 4.6.1.7.4 requires verification that the 8" containment purge valves are sealed closed. ITS SR 3.6.3.2 does not require the 8" purge valves to be sealed closed. The 8" purge valves are not required to be sealed closed since they are capable of closing in the environment following a LOCA. The ITS and CTS both allow these valves to be open for specific reasons during operation. Operator cognizance will assure that isolation can be achieved if required. Surveillance of the valve position every 31 days is sufficient to assure they are not mispositioned. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

L.6 CTS 4.6.1.1.a requires verifying at least once per 31 days that all penetrations not capable of being closed by Operable containment isolation valves and required to be closed during accident conditions are closed. This requirement is modified by an asterisk which states that for devices located inside containment and which are locked, sealed, or otherwise secured in position, the verification is required during each cold shutdown but not more often than once per 92 days. ITS LCO 3.6.3 Required Action A.2 and Required Action D.2, and ITS SR 3.6.3.4 contain requirements for verifying isolation of penetrations not capable of being closed by Operable automatic containment isolation valves. The Completion Times and Frequency specified for devices located inside containment are prior to entering Mode 4 from Mode 5 if not performed within the previous 92 days. This change is less restrictive in that all devices inside containment are verified on the same schedule whether or not they are locked, sealed, or otherwise secured from unintentional operation. This change is acceptable since access to containment is limited during power operation and the probability of misalignment of these devices once they are verified to be in the correct position is small. This change does not impact safety and is consistent with NUREG-1432.

L.7 CTS 4.6.1.1.a and CTS 4.6.1.1.a* require valve position verification for containment isolation valves and blind flanges which are not capable of automatic closure and are required to be closed during accident conditions. ITS SR 3.6.3.3 and ITS SR 3.6.3.4 only require this verification for valves which are not locked sealed or otherwise secured in the closed position. This change is acceptable since the position of these valves are verified administratively prior to locking sealing or securing in position. This change makes the verification of CIVs consistent with verification of valve position for system specific Specifications. Inoperable valves which are verified by CTS 4.6.1.1.a and CTS 4.6.1.1.a* to comply with Actions are covered under ITS LCO 3.6.3 Actions A, C, and D. This change does not impact safety. This change is consistent with TSTF-45 which has been approved by the NRC. Reference NUREG Exception 4.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

L.8 CTS 4.6.3.3 requires stroke time testing of each power operated or automatic valve used in CIAS, CPIAS, or CSAS. ITS SR3.6.3.5 only requires stroke time testing of automatic power operated containment isolation valves. The ITS does not require verification of isolation time for power operated valves which are not automatically actuated. The Bases for this SR states that the, "...isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analysis." There may be valves credited as containment isolation valves which are power operated (i.e., can be remotely operated) that do not receive a containment isolation signal (e.g., a GDC 57 penetration). These power operated valves do not have an isolation time as assumed in the accident analyses since they require operator action. Therefore, deleting reference to power operated valve isolation time testing reduces the potential for misinterpreting the requirements of this SR while maintaining the assumptions of the accident analysis. Other power operated valves and valves required for CSAS which do not receive a CIAS are tested in accordance with the Inservice Testing Program as applicable. This change does not impact safety. This change is consistent with TSTF-46 which has been approved by the NRC. Reference NUREG Exception 5.

L.9 CTS 3.6.3 Action 1.d states in part, "With one or more of the isolation valve(s) inoperable, maintain at least one isolation valve OPERABLE in each affected penetration that is open ...or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. With two containment isolation valves inoperable in the same penetration, ITS LCO 3.6.3 Action B allows 1 hour to isolate the penetration. If the penetration cannot be isolated in 1 hour, then ITS LCO 3.6.3 Action E must be entered which requires that the unit be placed in Mode 3 in 6 hours and Mode 5 in 36 hours. The requirements of the CTS and ITS are the same for this Condition except that the ITS explicitly allows 1 hour in which to isolate the affected penetration prior to initiating a shutdown, while the CTS requires that the penetration be isolated within the time allowed to reach Hot Standby. Allowing one hour in which to isolate the affected penetration is acceptable since there is a loss of Containment Integrity/Operability with two inoperable CIVs in a single penetration. Both CTS and ITS Containment Integrity/Operability Specifications allow 1 hour to restore the containment to Operable status (i.e. isolate the affected penetration). There is also 1 hour allowed by CTS/ITS LCO 3.0.3 to prepare for a shutdown during which time the penetration could be isolated. There is no impact to safety due to this change. This change is consistent with NUREG-1432.

NO SIGNIFICANT HAZARDS CONSIDERATION
SPECIFICATION 3.6.3

ADMINISTRATIVE CHANGES
(ITS 3.6.3 Discussion of Changes Labeled A.1, A.2, A.3, A.4, A.5, A.6, A.7, A.8, A.9, A.10, A.11, A.12, A.13, A.14, A.15, A.16, and A.17)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, is converting to the ITS as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." The proposed changes involve the reformatting, renumbering, rewording of the Technical Specifications (TS) and Bases with no change in intent, and the incorporation of current operating practices consistent with NUREG-1432. These changes, since they do not involve technical changes to the Current TS (CTS), are administrative. Below are the No Significant Hazards Consideration (NSHC) for the conversion of this Section/Chapter to NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

> The proposed changes involve reformatting, renumbering, and rewording of the CTS and Bases along with incorporation of PVNGS current operating practices and other changes to the CTS as discussed in the specific Discussion of Changes listed above in order to be consistent with NUREG-1432. The reformatting, renumbering, and rewording along with the other changes listed above, involves no technical changes to the CTS. Specifically, there will be no change in the requirements imposed on PVNGS due to these changes. During development of NUREG-1432, certain wording preferences or English language conventions were adopted. The proposed changes to this Section/Chapter are administrative in nature and do not impact initiators of any analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ADMINISTRATIVE CHANGES
(ITS 3.6.3 Discussion of Changes Labeled A.1, A.2, A.3, A.4, A.5, A.6, A.7, A.8, A.9, A.10, A.11, A.12, A.13, A.14, A.15, A.16, and A.17) (continued)

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or change the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes are administrative in nature and will not involve any technical changes. The proposed changes will not reduce a margin of safety because they have no impact on any safety analysis assumptions. Also, because these changes are administrative in nature, no question of safety is involved. Therefore, these changes do not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled M.1, M.2 and M.3)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. This particular NSHC is for the changes labeled "Technical Changes - More Restrictive" described in the specific Discussion of Changes listed above. The proposed changes incorporate more restrictive changes into the CTS by either making current requirements more stringent or adding new requirements which currently do not exist.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

> The proposed changes provide more stringent requirements than previously existed in the CTS. The more stringent requirements will not result in operation that will increase the probability of initiating an analyzed event. If anything, the new requirements may decrease the probability or consequences of an analyzed event by incorporating the more restrictive changes discussed in the specific Discussion of Changes listed above. These changes will not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements will not alter the operation and will continue to ensure process variables, structures, systems, or components are maintained consistent with safety analyses and licensing basis. These changes have been reviewed to ensure that no previously evaluated accident has been adversely affected. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident evaluated.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled M.1, M.2 and M.3)

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

> Making existing requirements more restrictive and adding more restrictive requirements to the CTS will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes do impose different requirements. However, they are consistent with the assumptions made in the safety analyses, licensing basis, and NUREG-1432. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

> The proposed changes provide more stringent requirements than previously existed in the CTS. An evaluation of these changes concluded that adding these more restrictive requirements either increases or has no impact on the margin of safety. The changes provide additional restrictions which may enhance plant safety. These changes maintain requirements of the safety analysis, licensing basis, and NUREG-1432. As such, no question of safety is involved. Therefore, these changes will not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.6.3 Discussion of Changes Labeled LA.2, LA.3, and LA.4)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed changes, since detail is being removed from the CTS to a Licensee Controlled Document, are less restrictive. The descriptions of these changes are in the Discussion of Changes listed above.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

> The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes do not result in any hardware changes or changes to plant operating practices. The details being relocated are not assumed to be an initiator of any analyzed event. The Licensee Controlled Document containing the relocated requirements will be maintained using the provisions of 10 CFR 50.59 or other specified control processes and is subject to the change control process in the Administrative Controls Section of the ITS. Since any changes to a Licensee Controlled Document will be evaluated, no increase in the probability or consequences of an accident previously evaluated will be allowed. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.6.3 Discussion of Changes Labeled LA.2, LA.3, and LA.4) (continued)

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes will not impose different requirements and adequate control of information will still be maintained. These changes will not alter assumptions made in the safety analysis or licensing basis. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not reduce a margin of safety since they have no impact on any safety analysis assumptions. In addition, the requirements to be transposed from the CTS to the Licensee Controlled Document are the same as the CTS. Since any future changes to this Licensee Controlled Document will be evaluated per the requirements of 10 CFR 50.59, or other specified control processes, no reduction (significant or insignificant) in a margin of safety will be allowed. Therefore, these changes will not involve a significant reduction in a margin of safety.

The NRC review provides a certain margin of safety, and although this review will no longer be performed prior to submittal, the NRC still inspects the 10 CFR 50.59 process. The proposed changes are consistent with NUREG-1432, which was approved by the NRC Staff. The change controls for proposed relocated details and requirements provide an acceptable level of regulatory authority. Revising the CTS to reflect the approved level of detail per NUREG-1432 reinforces the conclusion that there is not a significant reduction in the margin of safety. Therefore, revising the CTS to reflect the NRC accepted level of detail and requirements ensures no reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG 1432.

L.1 CTS 4.6.1.1.a requires verification that manual valves, blind flanges and deactivated automatic valves which are relied upon for containment isolation are properly positioned and secured. ITS LCO 3.6.3 Actions A.2, C.2, E.2, SR 3.6.3.3 and SR 3.6.3.4 also require verification of containment isolation manual valves, blind flanges and deactivated automatic valves except that the requirements are modified by Notes which allow the verification to be performed by administrative means if the isolation device is located in a high radiation area. Performing verification of position and securing of isolation devices by administrative means is acceptable since access to high radiation areas is restricted. Review of approximately 150 Commitment Action Tracking System records indicates that the probability of misalignment of the devices once they have been verified to be in the correct position is minimal. This change does not impact safety and is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.1) (continued)

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change allows verification of isolation devices which are relied upon for containment isolation to be performed by administrative means. Periodic verification of manual valve, deactivated automatic valve, and blind flange isolation is required to assure that these devices will be in the position necessary to support containment isolation in case of an accident. Access to high radiation areas is controlled by administrative means. Since access to these areas is restricted, the probability of a valve becoming mispositioned once it is verified to be in the correct position is minimal. This change will help to maintain personnel exposure ALARA. This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change allows verification of isolation devices which are relied upon for containment isolation to be performed by administrative means. Periodic verification of manual valve, deactivated automatic valve, and blind flange isolation is required to assure that these devices will be in the position necessary to support containment isolation in case of an accident. Access to high radiation areas is controlled by administrative means. Since access to these areas is restricted, the probability of a valve becoming mispositioned once it is verified to be in the correct position is minimal. This change will help to maintain personnel exposure ALARA. This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.1) (continued)

Standard 3. -- Does the proposed change involve a significant reduction in a margin of safety?

The proposed change allows verification of isolation devices which are relied upon for containment isolation to be performed by administrative means. Periodic verification of manual valve, deactivated automatic valve, and blind flange isolation is required to assure that these devices will be in the position necessary to support containment isolation in case of an accident. Access to high radiation areas is controlled by administrative means. Since access to these areas is restricted, the probability of a valve becoming mispositioned once it is verified to be in the correct position is minimal. This change will help to maintain personnel exposure ALARA. This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for conversion to NUREG-1432.

L.2 CTS 4.6.1.7.2 requires leakage rate testing of the 42" containment purge isolation valves at least once per 6 months on a Staggered Test Basis. ITS SR 3.6.3.6 requires leakage rate testing every 184 days AND within 92 days after opening the valve. Deleting the requirement to test on a Staggered Test Basis is considered a less restrictive change. The reason for the Staggered Test Basis is to prevent testing all the same components at the same time which could cause a total loss of function and/or perturbation in plant operation. The two containment purge penetrations function independently of each other during Modes 1 through 4. There is no increased potential for plant perturbations or loss of function due to testing both penetrations simultaneously. This change does not impact safety and is consistent with NUREG-1432.

CTS 4.6.1.7.3 requires leakage rate testing of the 8" containment purge valves once per 92 days. ITS SR 3.6.3.6 requires leakage rate testing of the 8" containment purge valves every 184 days <u>AND</u> within 92 days after opening. The change in frequency from once per 92 days to once per 184 days is acceptable since there is no reason to believe that the seals on the 8" purge valves would degrade from environmental causes any faster than the seals on the 42" purge valves. The 8" purge valves are cycled more frequently than the 42" purge valves, but the requirement to test within 92 days after opening will detect increased degradation due to operation. This change does not reduce the margin of safety since increased seal degradation due to cycling of the valves will be detected by the test required within 92 days after opening. These changes in SR Frequency are consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.2) (continued)

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change revises the Frequency for Surveillance Testing of the containment purge valves. The existing requirement is once per 6 months on a STAGGERED TEST BASIS for the refueling purge valves (42-inch) and once per 92 days for the power access purge valves (8-inch). The Frequency for both types of valves will be changed to once every 184 days AND within 92 days after opening.

The proposed change removes the requirement to local leakage rate test the 42" containment purge isolation valves on a Staggered Test Basis. Deleting the requirement to test on a Staggered Test Basis is considered a less restrictive change. The reason for the Staggered Test Basis is to prevent testing all the same components at the same time which could cause a total loss of function and/or perturbation in plant operation. The two containment purge penetrations function independently of each other during Modes 1 through 4. There is no increased potential for plant perturbations or loss of function due to testing both penetrations simultaneously. This change does not impact safety and is consistent with NUREG-1432.

The change in frequency from once per 92 days to once per 184 days for the power access purge valves is acceptable since there is no reason to believe that the seals on the 8" purge valves would degrade from environmental causes any faster than the seals on the 42-inch purge valves. The 8-inch purge valves are cycled more frequently than the 42-inch purge valves, but the requirement to test within 92 days after opening will detect increased degradation due to operation. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.2) (continued)

This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change revises the Frequency for Surveillance Testing of the containment purge valves. The existing requirement is once per 6 months on a STAGGERED TEST BASIS for the refueling purge valves (42-inch) and once per 92 days for the power access purge valves (8-inch). The Frequency for both types of valves will be changed to once every 184 days AND within 92 days after opening.

The proposed change removes the requirement to local leakage rate test the 42" containment purge isolation valves on a Staggered Test Basis. Deleting the requirement to test on a Staggered Test Basis is considered a less restrictive change. The reason for the Staggered Test Basis is to prevent testing all the same components at the same time which could cause a total loss of function and/or perturbation in plant operation. The two containment purge penetrations function independently of each other during Modes 1 through 4. There is no increased potential for plant perturbations or loss of function due to testing both penetrations simultaneously. This change does not impact safety and is consistent with NUREG-1432.

The change in frequency from once per 92 days to once per 184 days for the power access purge valves is acceptable since there is no reason to believe that the seals on the 8" purge valves would degrade from environmental causes any faster than the seals on the 42-inch purge valves. The 8-inch purge valves are cycled more frequently than the 42-inch purge valves, but the requirement to test within 92 days after opening will detect increased degradation due to operation. This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.2) (continued)

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed change revises the Frequency for Surveillance Testing of the containment purge valves. The existing requirement is once per 6 months on a STAGGERED TEST BASIS for the refueling purge valves (42-inch) and once per 92 days for the power access purge valves (8-inch). The Frequency for both types of valves will be changed to once every 184 days AND within 92 days after opening.

The proposed change removes the requirement to local leakage rate test the 42" containment purge isolation valves on a Staggered Test Basis. Deleting the requirement to test on a Staggered Test Basis is considered a less restrictive change. The reason for the Staggered Test Basis is to prevent testing all the same components at the same time which could cause a total loss of function and/or perturbation in plant operation. The two containment purge penetrations function independently of each other during Modes 1 through 4. There is no increased potential for plant perturbations or loss of function due to testing both penetrations simultaneously. This change does not impact safety and is consistent with NUREG-1432.

The reason for the STAGGERED TEST BASIS for the refueling purge valves is to detect generic degradation of the seals by testing more often. This change does not affect the level of safety since the resilient seals are of varying ages and test history has shown that failure of one valve to meet the leakage criteria does not indicate impending failure of other seals.

The change in frequency from once per 92 days to once per 184 days for the power access purge valves is acceptable since there is no reason to believe that the seals on the 8" purge valves would degrade from environmental causes any faster than the seals on the 42-inch purge valves. The 8-inch purge valves are cycled more frequently than the 42-inch purge valves, but the requirement to test within 92 days after opening will detect increased degradation due to operation. This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.3)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for conversion to NUREG-1432.

L.3 CTS 4.6.3.2 requires verification of automatic valve actuation using a test signal. ITS allows verification using an actual or simulated actuation signal instead of just a test signal. This change allows PVNGS to take credit for CIV SRs if actuation occurs in the event an actual actuation signal is received. In this case, if an actual signal is received and the appropriate CIVs properly actuate per the safety analysis, there would be no need to perform the SRs at the original 18 month interval. PVNGS would have the option to either start the SR frequency from receipt of the actual actuation or to retest the CIVs as originally scheduled. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal. This change does not impact safety and is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.3) (continued)

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change allows the use of an actual actuation signal to satisfy the Surveillance Requirements for verifying automatic actuation of components. Currently, a test actuation signal is required to perform this testing. This change allows PVNGS to take credit for CIV SRs if actuation occurs in the event an actual actuation signal is received. In this case, if an actual signal is received and the appropriate CIVs properly actuate per the safety analysis, there would be no need to perform the SRs at the original 18 month interval. PVNGS would have the option to either start the SR frequency from receipt of the actual actuation or to retest the CIVs as originally scheduled. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal. This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change allows the use of an actual actuation signal to satisfy the Surveillance Requirements for verifying automatic actuation of components. Currently, a test actuation signal is required to perform this testing. This change allows PVNGS to take credit for CIV SRs if actuation occurs in the event an actual actuation signal is received. In this case, if an actual signal is received and the appropriate CIVs properly actuate per the safety analysis, there would be no need to perform the SRs at the original 18 month interval. PVNGS would have the option to either start the SR frequency from receipt of the actual actuation or to retest the CIVs as originally scheduled. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal. This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

[illegible]

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.3) (continued)

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed change allows the use of an actual actuation signal to satisfy the Surveillance Requirements for verifying automatic actuation of components. Currently, a test actuation signal is required to perform this testing. This change allows PVNGS to take credit for CIV SRs if actuation occurs in the event an actual actuation signal is received. In this case, if an actual signal is received and the appropriate CIVs properly actuate per the safety analysis, there would be no need to perform the SRs at the original 18 month interval. PVNGS would have the option to either start the SR frequency from receipt of the actual actuation or to retest the CIVs as originally scheduled. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal. This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.4)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for conversion to NUREG-1432.

L.4 SR 4.6.3.2 requires verification that automatic CIVs actuate to the required position upon receipt of an actuation signal. ITS SR 3.6.3.7 only requires this Surveillance to be performed for valves which are not locked, sealed or otherwise secured in position. This change is acceptable since valves secured in the closed position are considered Operable. Valves which are secured in the open position are controlled administratively by the PVNGS locked valve, breaker, and component control process. ITS LCO 3.6.3 Actions are modified by a Note which allows valves to be open under administrative controls. Testing only those valves which are not secured in position is acceptable because the controls placed on valves which are secured in position are adequate to assure they will be capable of performing their safety function. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.4) (continued)

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change removes the requirement to test the automatic actuation of valves which are locked, sealed, or otherwise secured in position. The current requirement is to test all automatic valves. Testing of automatic valves is performed to ensure that they will move to the position required to isolate containment in case of an accident. Removing the requirement to test locked valves is acceptable since valves which are secured in position are controlled administratively by the PVNGS locked valve, breaker, and component control process. Testing only those valves which are not secured in position is acceptable because the controls placed on valves which are secured in position are adequate to assure they will be capable of performing their safety function. This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change removes the requirement to test the automatic actuation of valves which are locked, sealed, or otherwise secured in position. The current requirement is to test all automatic valves. Testing of automatic valves is performed to ensure that they will move to the position required to isolate containment in case of an accident. Removing the requirement to test locked valves is acceptable since valves which are secured in position are controlled administratively by the PVNGS locked valve, breaker, and component control process. Testing only those valves which are not secured in position is acceptable because the controls placed on valves which are secured in position are adequate to assure they will be capable of performing their safety function. This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.4) (continued)

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed change removes the requirement to test the automatic actuation of valves which are locked, sealed, or otherwise secured in position. The current requirement is to test all automatic valves. Testing of automatic valves is performed to ensure that they will move to the position required to isolate containment in case of an accident. Removing the requirement to test locked valves is acceptable since valves which are secured in position are controlled administratively by the PVNGS locked valve, breaker, and component control process. Testing only those valves which are not secured in position is acceptable because the controls placed on valves which are secured in position are adequate to assure they will be capable of performing their safety function. This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.5)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for conversion to NUREG-1432.

L.5 CTS 4.6.1.7.4 requires verification that the 8" containment purge valves are sealed closed. ITS SR 3.6.3.2 does not require the 8" purge valves to be sealed closed. The 8" purge valves are not required to be sealed closed since they are capable of closing in the environment following a LOCA. The ITS and CTS both allow these valves to be open for specific reasons during operation. Operator cognizance will assure that isolation can be achieved if required. Surveillance of the valve position every 31 days is sufficient to assure they are not mispositioned. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.5) (continued)

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change removes the requirement to seal the power access purge valves (8-inch) closed. The refueling purge (42-inch) valves are required to be sealed closed during operation since they are not capable of closing under design basis conditions in the period of time assumed for containment isolation in the safety analysis. The power access purge valves are capable of closing under design basis conditions and therefore should not be required to be secured closed. Both the CTS and ITS allow these valves to be open under administrative control during operation. Operator cognizance will assure that isolation can be achieved if required. This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change removes the requirement to seal the power access purge valves (8-inch) closed. The refueling purge (42-inch) valves are required to be sealed closed during operation since they are not capable of closing under design basis conditions in the period of time assumed for containment isolation in the safety analysis. The power access purge valves are capable of closing under design basis conditions and therefore should not be required to be secured closed. Both the CTS and ITS allow these valves to be open under administrative control during operation. Operator cognizance will assure that isolation can be achieved if required. This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.5) (continued)

Standard 3. -- Does the proposed change involve a significant reduction in a margin of safety?

The proposed change removes the requirement to seal the power access purge valves (8-inch) closed. The refueling purge (42-inch) valves are required to be sealed closed during operation since they are not capable of closing under design basis conditions in the period of time assumed for containment isolation in the safety analysis. The power access purge valves are capable of closing under design basis conditions and therefore should not be required to be secured closed. Both the CTS and ITS allow these valves to be open under administrative control during operation. Operator cognizance will assure that isolation can be achieved if required. This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.6)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for conversion to NUREG-1432.

L.6 CTS 4.6.1.1.a requires verifying at least once per 31 days that all penetrations not capable of being closed by Operable containment isolation valves and required to be closed during accident conditions are closed. This requirement is modified by an asterisk which states that for devices located inside containment and which are locked, sealed, or otherwise secured in position, the verification is required during each cold shutdown but not more often than once per 92 days. ITS LCO 3.6.3 Required Action A.2 and Required Action D.2, and ITS SR 3.6.3.4 contain requirements for verifying isolation of penetrations not capable of being closed by Operable automatic containment isolation valves. The Completion Times and Frequency specified for devices located inside containment are prior to entering Mode 4 from Mode 5 if not performed within the previous 92 days. This change is less restrictive in that all devices inside containment are verified on the same schedule whether or not they are locked, sealed, or otherwise secured from unintentional operation. This change is acceptable since access to containment is limited during power operation and the probability of misalignment of these devices once they are verified to be in the correct position is small. This change does not impact safety and is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.6) (continued)

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change alters the Surveillance Frequency for devices located inside containment which are used to isolate containment. CTS 4.6.1.1.a requires verifying at least once per 31 days that all penetrations not capable of being closed by Operable containment isolation valves and required to be closed during accident conditions are closed. This requirement is modified by an asterisk which states that for devices located inside containment and which are locked, sealed, or otherwise secured in position, the verification is required during each cold shutdown but not more often than once per 92 days. ITS LCO 3.6.3 Required Action A.2 and Required Action D.2, and ITS SR 3.6.3.4 contain requirements for verifying isolation of penetrations not capable of being closed by Operable automatic containment isolation valves. The Completion Times and Frequency specified for devices located inside containment are prior to entering Mode 4 from Mode 5 if not performed within the previous 92 days. This change is less restrictive in that all devices inside containment are verified on the same schedule whether or not they are locked, sealed, or otherwise secured from unintentional operation. This change is acceptable since access to containment is limited during power operation and the probability of misalignment of these devices once they are verified to be in the correct position is small. This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.6) (continued)

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change alters the Surveillance Frequency for devices located inside containment which are used to isolate containment. CTS 4.6.1.1.a requires verifying at least once per 31 days that all penetrations not capable of being closed by Operable containment isolation valves and required to be closed during accident conditions are closed. This requirement is modified by an asterisk which states that for devices located inside containment and which are locked, sealed, or otherwise secured in position, the verification is required during each cold shutdown but not more often than once per 92 days. ITS LCO 3.6.3 Required Action A.2 and Required Action D.2, and ITS SR 3.6.3.4 contain requirements for verifying isolation of penetrations not capable of being closed by Operable automatic containment isolation valves. The Completion Times and Frequency specified for devices located inside containment are prior to entering Mode 4 from Mode 5 if not performed within the previous 92 days. This change is less restrictive in that all devices inside containment are verified on the same schedule whether or not they are locked, sealed, or otherwise secured from unintentional operation. This change is acceptable since access to containment is limited during power operation and the probability of misalignment of these devices once they are verified to be in the correct position is small. This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.6) (continued)

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed change alters the Surveillance Frequency for devices located inside containment which are used to isolate containment. CTS 4.6.1.1.a requires verifying at least once per 31 days that all penetrations not capable of being closed by Operable containment isolation valves and required to be closed during accident conditions are closed. This requirement is modified by an asterisk which states that for devices located inside containment and which are locked, sealed, or otherwise secured in position, the verification is required during each cold shutdown but not more often than once per 92 days. ITS LCO 3.6.3 Required Action A.2 and Required Action D.2, and ITS SR 3.6.3.4 contain requirements for verifying isolation of penetrations not capable of being closed by Operable automatic containment isolation valves. The Completion Times and Frequency specified for devices located inside containment are prior to entering Mode 4 from Mode 5 if not performed within the previous 92 days. This change is less restrictive in that all devices inside containment are verified on the same schedule whether or not they are locked, sealed, or otherwise secured from unintentional operation. This change is acceptable since access to containment is limited during power operation and the probability of misalignment of these devices once they are verified to be in the correct position is small. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.7)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for conversion to NUREG-1432.

L.7 CTS 4.6.1.1.a and CTS 4.6.1.1.a* require valve position verification for containment isolation valves and blind flanges which are not capable of automatic closure and are required to be closed during accident conditions. ITS SR 3.6.3.3 and ITS SR 3.6.3.4 only require this verification for valves which are not locked sealed or otherwise secured in the closed position. This change is acceptable since the position of these valves are verified administratively prior to locking sealing or securing in position. This change makes the verification of CIVs consistent with verification of valve position for system specific Specifications. Inoperable valves which are verified by CTS 4.6.1.1.a and CTS 4.6.1.1.a* to comply with Actions are covered under ITS LCO 3.6.3 Actions A, C, and D. This change does not impact safety. This change is consistent with TSTF-45 which has been approved by the NRC. Reference NUREG Exception 4.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.7) (continued)

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change allows removal of the requirement to periodically verify the position of CIVs which are locked sealed or otherwise secured in the closed position. Periodic verification of valve position is normally performed to assure that valves which are not capable of automatic actuation are in the correct position required during accident conditions. Containment isolation valves which are locked, sealed, or otherwise secured in the closed position are already verified to be in the correct position at the time they are locked, sealed, or otherwise secured. Locking, sealing and securing these valves in position assures that they will not be subject to unintended operation and therefore will remain in the correct position during accident conditions. This change will help to maintain personnel exposure ALARA. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore, this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.7) (continued)

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change allows removal of the requirement to periodically verify the position of CIVs which are locked sealed or otherwise secured in the closed position. Periodic verification of valve position is normally performed to assure that valves which are not capable of automatic actuation are in the correct position required during accident conditions. Containment isolation valves which are locked, sealed, or otherwise secured in the closed position are already verified to be in the correct position at the time they are locked, sealed, or otherwise secured. Locking, sealing and securing these valves in position assures that they will not be subject to unintended operation and therefore will remain in the correct position during accident conditions. This change will help to maintain personnel exposure ALARA. This change is consistent with TSTF-45 which has been approved by the NRC. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.7) (continued)

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed change allows removal of the requirement to periodically verify the position of CIVs which are locked sealed or otherwise secured in the closed position. Periodic verification of valve position is normally performed to assure that valves which are not capable of automatic actuation are in the correct position required during accident conditions. Containment isolation valves which are locked, sealed, or otherwise secured in the closed position are already verified to be in the correct position at the time they are locked, sealed, or otherwise secured. Locking, sealing and securing these valves in position assures that they will not be subject to unintended operation and therefore will remain in the correct position during accident conditions. This change will help to maintain personnel exposure ALARA. This change is consistent with TSTF-45 which has been approved by the NRC. This change will not reduce a margin of safety since it has no impact on safety analysis assumptions.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.8)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for conversion to NUREG-1432.

L.8 CTS 4.6.3.3 requires stroke time testing of each power operated or automatic valve used in CIAS, CPIAS, or CSAS. ITS SR3.6.3.5 only requires stroke time testing of automatic power operated containment isolation valves. The ITS does not require verification of isolation time for power operated valves which are not automatically actuated. The Bases for this SR states that the, "(isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analysis." There may be valves credited as containment isolation valves which are power operated (i.e., can be remotely operated) that do not receive a containment isolation signal (e.g., a GDC 57 penetration). These power operated valves do not have an isolation time as assumed in the accident analyses since they require operator action. Therefore, deleting reference to power operated valve isolation time testing reduces the potential for misinterpreting the requirements of this SR while maintaining the assumptions of the accident analysis. Other power operated valves and valves required for CSAS which do not receive a CIAS are tested in accordance with the Inservice Testing Program as applicable. This change does not impact safety. This change is consistent with TSTF-46 which has been approved by the NRC. Reference NUREG Exception 5.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.8) (continued)

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change removes the requirement of stroke time testing power operated valves which are not designed for automatic actuation on a CIAS. The Bases for this SR states that the, "(isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analysis." There may be valves credited as containment isolation valves which are power operated (i.e., can be remotely operated) that do not receive a containment isolation signal (e.g., a GDC 57 penetration). These power operated valves do not have an isolation time as assumed in the accident analyses since they require operator action. Therefore, deleting reference to power operated valve isolation time testing reduces the potential for misinterpreting the requirements of this SR while maintaining the assumptions of the accident analysis. This change is consistent with TSTF-46 which has been approved by the NRC. This change will help to maintain personnel exposure ALARA. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore, this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.8) (continued)

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

CTS 3.6.3 Action 1.d states in part, "With one or more of the isolation valve(s) inoperable, maintain at least one isolation valve OPERABLE in each affected penetration that is open (or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. With two containment isolation valves inoperable in the same penetration, ITS LCO 3.6.3 Action B allows 1 hour to isolate the penetration. If the penetration cannot be isolated in 1 hour, then ITS LCO 3.6.3 Action E must be entered which requires that the unit be placed in Mode 3 in 6 hours and Mode 5 in 36 hours. The requirements of the CTS and ITS are the same for this Condition except that the ITS explicitly allows 1 hour in which to isolate the affected penetration prior to initiating a shutdown, while the CTS requires that the penetration be isolated within the time allowed to reach Hot Standby. Allowing one hour in which to isolate the affected penetration is acceptable since there is a loss of Containment Integrity/Operability with two inoperable CIVs in a single penetration. Both CTS and ITS Containment Integrity/Operability Specifications allow 1 hour to restore the containment to Operable status (i.e. isolate the affected penetration). There is also 1 hour allowed by CTS/ITS LCO 3.0.3 to prepare for a shutdown during which time the penetration could be isolated. There is no impact to safety due to this change. This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.8) (continued)

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed change removes the requirement of stroke time testing power operated valves which are not designed for automatic actuation on a CIAS. The Bases for this SR states that the, "(isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analysis." There may be valves credited as containment isolation valves which are power operated (i.e., can be remotely operated) that do not receive a containment isolation signal (e.g., a GDC 57 penetration). These power operated valves do not have an isolation time as assumed in the accident analyses since they require operator action. Therefore, deleting reference to power operated valve isolation time testing reduces the potential for misinterpreting the requirements of this SR while maintaining the assumptions of the accident analysis. This change is consistent with TSTF-46 which has been approved by the NRC. This change will help to maintain personnel exposure ALARA. This change will help to maintain personnel exposure ALARA. This change will not reduce a margin of safety since it has no impact on safety analysis assumptions.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.9)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for conversion to NUREG-1432.

L.9 CTS 3.6.3 Action 1.d states in part, "With one or more of the isolation valve(s) inoperable, maintain at least one isolation valve OPERABLE in each affected penetration that is open (or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. With two containmetn isolation valves inoperable in the same penetration, ITS LCO3.6.3 Action B allows 1 hour to isolate the penetration. If the penetration cannot be isolated in 1 hour, then ITS LCO 3.6.3 Action E must be entered which requires that the unit be placed in Mode 3 in 6 hours and Mode 5 in 36 hours. The requirements of the CTS and ITS are the same for this Condition except that the ITS explicitly allows 1 hour in which to isolate the affected penetration prior to initiating a shutdown, while the CTS requires that the penetration be isolated within the time allowed to reach Hot Standby. Allowing one hour in which to isolate the affected penetration is acceptable since there is a loss of Containment Integrity/Operability with two inoperable CIVs in a single penetration. Both CTS and ITS Containment Integrity/Operability Specifications allow 1 hour to restore the containment to Operable status (i.e. isolate the affected penetration). There is also 1 hour allowed by CTS/ITS LCO 3.0.3 to prepare for a shutdown during which time the penetration could be isolated. There is no impact to safety due to this change. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.9) (continued)

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

CTS 3.6.3 Action 1.d states in part, "With one or more of the isolation valve(s) inoperable, maintain at least one isolation valve OPERABLE in each affected penetration that is open (or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. With two containment isolation valves inoperable in the same penetration, ITS LCO 3.6.3 Action B allows 1 hour to isolate the penetration. If the penetration cannot be isolated in 1 hour, then ITS LCO 3.6.3 Action E must be entered which requires that the unit be placed in Mode 3 in 6 hours and Mode 5 in 36 hours. The requirements of the CTS and ITS are the same for this Condition except that the ITS explicitly allows 1 hour in which to isolate the affected penetration prior to initiating a shutdown, while the CTS requires that the penetration be isolated within the time allowed to reach Hot Standby. Allowing one hour in which to isolate the affected penetration is acceptable since there is a loss of Containment Integrity/Operability with two inoperable CIVs in a single penetration. Both CTS and ITS Containment Integrity/Operability Specifications allow 1 hour to restore the containment to Operable status (i.e. isolate the affected penetration). There is also 1 hour allowed by CTS/ITS LCO 3.0.3 to prepare for a shutdown during which time the penetration could be isolated. There is no impact to safety due to this change. This change is consistent with NUREG-1432. This change will help to maintain personnel exposure ALARA. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore, this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.9) (continued)

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

CTS 3.6.3 Action 1.d states in part, "With one or more of the isolation valve(s) inoperable, maintain at least one isolation valve OPERABLE in each affected penetration that is open (or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. With two containment isolation valves inoperable in the same penetration, ITS LCO 3.6.3 Action B allows 1 hour to isolate the penetration. If the penetration cannot be isolated in 1 hour, then ITS LCO 3.6.3 Action E must be entered which requires that the unit be placed in Mode 3 in 6 hours and Mode 5 in 36 hours. The requirements of the CTS and ITS are the same for this Condition except that the ITS explicitly allows 1 hour in which to isolate the affected penetration prior to initiating a shutdown, while the CTS requires that the penetration be isolated within the time allowed to reach Hot Standby. Allowing one hour in which to isolate the affected penetration is acceptable since there is a loss of Containment Integrity/Operability with two inoperable CIVs in a single penetration. Both CTS and ITS Containment Integrity/Operability Specifications allow 1 hour to restore the containment to Operable status (i.e. isolate the affected penetration). There is also 1 hour allowed by CTS/ITS LCO 3.0.3 to prepare for a shutdown during which time the penetration could be isolated. There is no impact to safety due to this change. This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled L.9) (continued)

Standard 3. -- Does the proposed change involve a significant reduction in a margin of safety?

CTS 3.6.3 Action 1.d states in part, "With one or more of the isolation valve(s) inoperable, maintain at least one isolation valve OPERABLE in each affected penetration that is open (or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. With two containment isolation valves inoperable in the same penetration, ITS LCO 3.6.3 Action B allows 1 hour to isolate the penetration. If the penetration cannot be isolated in 1 hour, then ITS LCO 3.6.3 Action E must be entered which requires that the unit be placed in Mode 3 in 6 hours and Mode 5 in 36 hours. The requirements of the CTS and ITS are the same for this Condition except that the ITS explicitly allows 1 hour in which to isolate the affected penetration prior to initiating a shutdown, while the CTS requires that the penetration be isolated within the time allowed to reach Hot Standby. Allowing one hour in which to isolate the affected penetration is acceptable since there is a loss of Containment Integrity/Operability with two inoperable CIVs in a single penetration. Both CTS and ITS Containment Integrity/Operability Specifications allow 1 hour to restore the containment to Operable status (i.e. isolate the affected penetration). There is also 1 hour allowed by CTS/ITS LCO 3.0.3 to prepare for a shutdown during which time the penetration could be isolated. There is no impact to safety due to this change. This change is consistent with NUREG-1432. This change will help to maintain personnel exposure ALARA. This change will not reduce a margin of safety since it has no impact on safety analysis assumptions.

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.6.4
MARK UP

<DOC>
<CTS>

3.6 CONTAINMENT SYSTEMS

3.6.4 Containment Pressure ~~(Atmospheric and Dual)~~

<3.6.1.4> LCO 3.6.4 Containment pressure shall be ~~[Dual: > 14.375 psia and < 27 inches water gauge]; [Atmospheric:~~ ≥ -0.3 psig and ≤ ~~+1.5~~ +2.5 psig~~]~~. (2)

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.6.1.4ACT>	A. Containment pressure not within limits.	A.1 Restore containment pressure to within limits.	1 hour
<3.6.1.4ACT>	B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
<4.6.1.4>	SR 3.6.4.1 Verify containment pressure is within limits.	12 hours

CE STS

NUREG-1432 REV. 1

SPECIFICATION 3.6.4

BASES MARK UP

B 3.6 CONTAINMENT SYSTEMS

B 3.6.4A Containment Pressure (Atmospheric)

BASES

BACKGROUND

The containment pressure is limited during normal operation to preserve the initial conditions assumed in the accident analyses for a loss of coolant accident (LOCA) or main steam line break (MSLB). These limits also prevent the containment pressure from exceeding the containment design negative pressure differential with respect to the outside atmosphere in the event of inadvertent actuation of the Containment Spray System.

Containment pressure is a process variable that is monitored and controlled. The containment pressure limits are derived from the input conditions used in the containment functional analyses and the containment structure external pressure analysis. Should operation occur outside these limits coincident with a Design Basis Accident (DBA), post accident containment pressures could exceed calculated values.

APPLICABLE SAFETY ANALYSES

A double ended discharge line break LOCA with maximum ECCS flow results in

52.0

Containment internal pressure is an initial condition used in the DBA analyses to establish the maximum peak containment internal pressure. The limiting DBAs considered for determining the maximum containment internal pressure (P_a) are the LOCA and MSLB. ~~An MSLB at 102% RTP results in~~ the highest calculated internal containment pressure of ~~[55.7]~~ psig, which is below the internal design pressure of 60 psig. The postulated DBAs are analyzed assuming degraded containment Engineered Safety Feature (ESF) systems (i.e., assuming the loss of one ESF bus, which is the worst case single active failure, resulting in one train of the Containment Spray System ~~and one train of the Containment Cooling System~~ being rendered inoperable). It is this maximum containment pressure that is used to ensure that the licensing basis dose limitations are met. (2) (3)

bounds the containment pressure allowed during normal operation.

2.5

the maximum peak containment internal pressure, 52.0 psig, and

The initial pressure condition used in the containment analysis ~~was [14.7] psia ([0.0] psig). This resulted in a maximum peak pressure from an MSLB of [55.7] psig.~~ The LCO limit of ~~[1.5]~~ psig ensures that, in the event of an accident, the maximum accident design pressure for containment, ~~[60]~~ psig, ~~is~~ are not exceeded. ~~If an MSLB~~ (2) (3)

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

occurred while the containment internal pressure was at the LCO value of [1.5] psig, a total pressure of [57.3] psig would result. This value is still below the design value of [60] psig. The containment was also designed for an internal pressure equal to [5.0] psig below external pressure in order to withstand the resultant pressure drop from an accidental actuation of the Containment Spray System. The LCO limit of [-0.3] psig ensures that operation within the design limit of [-0.5] psig is maintained. The maximum calculated external pressure that would occur as a result of an inadvertent actuation of the Containment Spray System is [2.8] psig. 2.6

4.0

-4.0

2

Containment pressure satisfies Criterion 2 of the NRC Policy Statement. 10CFR 50.36 (c)(2)(ii)

1

LCO

Maintaining containment pressure less than or equal to the LCO upper pressure limit ensures that, in the event of a DBA, the resultant peak containment accident pressure will remain below the containment design pressure. Maintaining containment pressure greater than or equal to the LCO lower pressure limit ensures that the containment will not exceed the design negative pressure differential following the inadvertent actuation of the Containment Spray System.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. Since maintaining containment pressure within limits is essential to ensure initial conditions assumed in the accident analysis are maintained, the LCO is applicable in MODES 1, 2, 3, and 4.

In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, maintaining containment pressure within the limits of the LCO is not required in MODE 5 or 6.

(continued)

BASES (continued)

ACTIONS

A.1

When containment pressure is not within the limits of the LCO, containment pressure must be restored to within these limits within 1 hour. The Required Action is necessary to return operation to within the bounds of the containment analysis. The 1 hour Completion Time is consistent with the ACTIONS of LCO 3.6.1, "Containment," which requires that containment be restored to OPERABLE status within 1 hour.

B.1 and B.2

If containment pressure cannot be restored to within limits within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.4A.1

Verifying that containment pressure is within limits ensures that operation remains within the limits assumed in the accident analysis. The 12 hour Frequency of this SR was developed after taking into consideration operating experience related to trending of containment pressure variations during the applicable MODES. Furthermore, the 12 hour Frequency is considered adequate in view of other indications available in the control room, including alarms, to alert the operator to an abnormal containment pressure condition.

REFERENCES

None.

NUREG-1432 EXCEPTIONS
SPECIFICATION 3.6.4

1. Grammar and/or editorial changes have been made to enhance clarity. No technical or intent changes to the Specification are made by this change.

2. The plant specific titles, nomenclature, number, parameter/value, reference, system description, system design, operating practices or analysis description was used (additions, deletions, and/or changes are included). Plant specific parameters/values were directly transferred from the CTS to the ITS.

3. The maximum peak containment internal pressure, Pa, as been changed to 52 psig to agree with the requirements contained within the Containment Leak Testing Program of ITS 5.0. The Discussion of Changes (DOC) for ITS 5.0 contains additional justification for this change.

PVNGS CTS
SPECIFICATION 3.6.4
MARK UP

Specification 3.6.4

3.6 CONTAINMENT SYSTEMS (A.1)

3.6.4 ~~INTERNAL~~ Containment PRESSURE

~~LIMITING CONDITION FOR OPERATION~~

LCO 3.6.4 ~~3.6.1.4~~ ~~Primary~~ containment ~~internal~~ pressure shall be ~~maintained between~~ ≥ -0.3 and ≤ 2.5 psig.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

ACT A ~~With the~~ containment ~~internal~~ pressure outside ~~of the~~ limits~~-above~~, restore ~~the internal~~ Containment pressure to within the limits within 1 hour

ACT B or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

SR 3.6.4.1 ~~4.6.1.4~~ Verify ~~The primary~~ containment ~~internal~~ pressure ~~shall be determined to be~~ within ~~the~~ limits at least once per 12 hours.

DISCUSSION OF CHANGES
SPECIFICATION 3.6.4

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering is in accordance with the Combustion Engineering Plant (CEOG) Standard Technical Specifications NUREG-1432, Rev. 1 (NUREG-1432). As a result, the Palo Verde Nuclear Generating Station (PVNGS) Improved Technical Specifications (ITS) should be more readable, and therefore understandable, by plant operators as well as other users. During the reformatting and renumbering of the ITS, no technical changes (either actual or interpretational) to the Current Technical Specification (CTS) were made unless they were identified and justified.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During NUREG-1432 development, certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or interpretational) to the CTS.

Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more detail does not result in a technical change.

TECHNICAL CHANGES - MORE RESTRICTIVE

None

TECHNICAL CHANGES - RELOCATIONS

None

TECHNICAL CHANGES - LESS RESTRICTIVE

None

NO SIGNIFICANT HAZARDS CONSIDERATION
SPECIFICATION 3.6.4

ADMINISTRATIVE CHANGES
(ITS 3.6.4 Discussion of Changes Labeled A.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, is converting to the ITS as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." The proposed changes involve the reformatting, renumbering, rewording of the Technical Specifications (TS) and Bases with no change in intent, and the incorporation of current operating practices consistent with NUREG-1432. These changes, since they do not involve technical changes to the Current TS (CTS), are administrative. Below are the No Significant Hazards Consideration (NSHC) for the conversion of this Section/Chapter to NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

> The proposed changes involve reformatting, renumbering, and rewording of the CTS and Bases along with incorporation of PVNGS current operating practices and other changes to the CTS as discussed in the specific Discussion of Changes listed above in order to be consistent with NUREG-1432. The reformatting, renumbering, and rewording along with the other changes listed above, involves no technical changes to the CTS. Specifically, there will be no change in the requirements imposed on PVNGS due to these changes. During development of NUREG-1432, certain wording preferences or English language conventions were adopted. The proposed changes to this Section/Chapter are administrative in nature and do not impact initiators of any analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ADMINISTRATIVE CHANGES
(ITS 3.6.4 Discussion of Changes Labeled (A.1) (continued)

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

> The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or change the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

> The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes are administrative in nature and will not involve any technical changes. The proposed changes will not reduce a margin of safety because they have no impact on any safety analysis assumptions. Also, because these changes are administrative in nature, no question of safety is involved. Therefore, these changes do not involve a significant reduction in a margin of safety.

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.6.5
MARK UP

<DOC>
<CTS>

3.6 CONTAINMENT SYSTEMS

3.6.5 Containment Air Temperature ~~(Atmospheric and Dual)~~

<3.6.1.5> LCO 3.6.5 Containment average air temperature shall be ≤ ~~[120]°F.~~ 117°F

<DOC LB.1>

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.6.1.5 ACT> A. Containment average air temperature not within limit.	A.1 Restore containment average air temperature to within limit.	8 hours
<3.6.1.5 ACT> B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<4.6.1.5> SR 3.6.5.1 Verify containment average air temperature is within limit.	24 hours

CE STS

NUREG-1432 REV. 1

SPECIFICATION 3.6.5

BASES MARK UP

B 3.6 CONTAINMENT SYSTEMS

B 3.6.5 Containment Air Temperature (Atmospheric and Dual)

BASES

BACKGROUND

The containment structure serves to contain radioactive material that may be released from the reactor core following a Design Basis Accident (DBA). The containment average air temperature is limited during normal operation to preserve the initial conditions assumed in the accident analyses for a loss of coolant accident (LOCA) or main steam line break (MSLB).

The containment average air temperature limit is derived from the input conditions used in the containment functional analyses and the containment structure external pressure analyses. This LCO ensures that initial conditions assumed in the analysis of containment response to a DBA are not violated during unit operations. The total amount of energy to be removed from containment by the Containment Spray and Cooling systems during post accident conditions is dependent on the energy released to the containment due to the event, as well as the initial containment temperature and pressure. The higher the initial temperature, the more energy that must be removed, resulting in a higher peak containment pressure and temperature. Exceeding containment design pressure may result in leakage greater than that assumed in the accident analysis (Ref. 1). Operation with containment temperature in excess of the LCO limit violates an initial condition assumed in the accident analysis. 1

APPLICABLE SAFETY ANALYSES

Containment average air temperature is an initial condition used in the DBA analyses that establishes the containment environmental qualification operating envelope for both pressure and temperature. The limit for containment average air temperature ensures that operation is maintained within the assumptions used in the DBA analysis for containment. The accident analyses and evaluations considered both LOCAs and MSLBs for determining the maximum peak containment pressures and temperatures. The worst case MSLB generates larger mass and energy releases than the worst case LOCA. Thus, the MSLB event bounds the LOCA event from the containment peak pressure and temperature standpoint. The 2

results in a higher peak temperature than

LOCA

MSLB;

however,

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

initial pre-accident temperature inside containment was assumed to be ~~[~~120~~]~~°F (Ref. 2).

~~For atmospheric containment,~~ the initial containment average air temperature condition of ~~[~~120~~]~~°F resulted in a maximum vapor temperature in containment of ~~[413]~~ 398.5°F. The temperature of the containment steel liner and concrete structure reach approximately 230°F and 220°F, respectively. The containment average air temperature limit of ~~[~~120~~]~~°F ensures that, in the event of an accident, the maximum design temperature for containment, ~~[~~300~~]~~°F, is not exceeded. The consequence of exceeding this design temperature may be the potential for degradation of the containment structure under accident loads. 2

The LCO limit of 117°F has been derived to account for instrument inaccuracies. The indicated limit of 117°F ensures that the actual limit of 120°F will not be exceeded.

~~For dual containment, the initial containment condition of [120]°F resulted in a maximum vapor temperature in containment of [413.5]°F. The temperature of the containment steel pressure vessel also reaches approximately [413.5]°F. The containment average temperature limit of [120]°F ensures that, in the event of an accident, the maximum design temperature for containment of [269.3]°F during LOCA conditions and [413.5]°F during MSLB conditions is not exceeded. The consequences of exceeding this design temperature may be the potential for degradation of the containment structure under accident loads.~~

Containment average air temperature satisfies Criterion 2 of ~~the NRC Policy Statement.~~ 10 CFR 50.36 (c)(2)(ii) 1

LCO

During a DBA, with an initial containment average air temperature less than or equal to the LCO temperature limit, the resultant peak accident temperature is maintained below the containment design temperature. As a result, the ability of containment to perform its function is ensured.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, maintaining containment average air temperature within the limit is not required in MODE 5 or 6.

(continued)

BASES (continued)

ACTIONS

A.1

When containment average air temperature is not within the limit of the LCO, it must be restored to within limit within 8 hours. This Required Action is necessary to return operation to within the bounds of the containment analysis. The 8 hour Completion Time is acceptable considering the sensitivity of the analysis to variations in this parameter and provides sufficient time to correct minor problems.

B.1 and B.2

If the containment average air temperature cannot be restored to within its limit within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.5.1

Verifying that containment average air temperature is within the LCO limit ensures that containment operation remains within the limit assumed for the containment analyses. In order to determine the containment average air temperature, an arithmetic average is calculated using measurements taken at locations within the containment selected to provide a representative sample of the overall containment atmosphere. The 24 hour Frequency of this SR is considered acceptable based on the observed slow rates of temperature increase within containment as a result of environmental heat sources (due to the large volume of containment). Furthermore, the 24 hour Frequency is considered adequate in view of other indications available in the control room, including alarms, to alert the operator to an abnormal containment temperature condition.

The primary containment average air temperature is determined by taking the arithmetical average of the temperatures at any five of the following locations:
a. Nominal Elevation 85'-0" c. Nominal Elevation 126'-0" e. Nominal Elevation 145'-0"
b. Nominal Elevation 85'-0" d. Nominal Elevation 126'-0" f. Nominal Elevation 188'-0"
g. Nominal Elevation 188'-0"

2

(continued)

BASES (continued)

REFERENCES	1. FSAR, Section 6.2
	2. FSAR, Section 9.4

NUREG-1432 EXCEPTIONS
SPECIFICATION 3.6.5

1. Grammar and/or editorial changes have been made to enhance clarity. No technical or intent changes to the Specification are made by this change.

2. The plant specific titles, nomenclature, number, parameter/value, reference, system description, system design, operating practices or analysis description was used (additions, deletions, and/or changes are included). Plant specific parameters/values were directly transferred from the CTS to the ITS.

PVNGS CTS
SPECIFICATION 3.6.5
MARK UP

Specification 3.6.5

A.1

3.6 CONTAINMENT SYSTEMS

3.6.5 Containment AIR TEMPERATURE

~~LIMITING CONDITION FOR OPERATION~~

LCO 3.6.5 3.6.1.5 ~~Primary~~ containment average air temperature shall ~~not exceed~~ ~~120°F~~ be ≤ 117°F. LB.1

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

ACT A — With the containment average air temperature greater than ~~120°F~~ 117°F LB.1, reduce the average air temperature to within the limit within 8 hours, or be in at least

ACT B — HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

SR 3.6.5.1 ~~4.6.1.5~~ ~~The primary~~ Verify containment average air temperature is within limit ~~shall be the arithmetical average of the temperatures at any five of the following locations and shall be determined at least~~ once per 24 hours: LA.1

Location

a. Nominal Elevation 85'0"

b. Nominal Elevation 85'0"

c. Nominal Elevation 126'0"

d. Nominal Elevation 126'0"

e. Nominal Elevation 145'0"

f. Nominal Elevation 188 0"

g. Nominal Elevation 188 0"

LA.1

DISCUSSION OF CHANGES
SPECIFICATION 3.6.5

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering is in accordance with the Combustion Engineering Plant (CEOG) Standard Technical Specifications NUREG-1432, Rev. 1 (NUREG-1432). As a result, the Palo Verde Nuclear Generating Station (PVNGS) Improved Technical Specifications (ITS) should be more readable, and therefore understandable, by plant operators as well as other users. During the reformatting and renumbering of the ITS, no technical changes (either actual or interpretational) to the Current Technical Specification (CTS) were made unless they were identified and justified.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During NUREG-1432 development, certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or interpretational) to the CTS.

Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more detail does not result in a technical change.

TECHNICAL CHANGES - MORE RESTRICTIVE

None

TECHNICAL CHANGES - RELOCATIONS

LA.1 CTS SR 4.6.1.5 provides locations where containment temperatures are to be measured for use in determining the containment average air temperature. This level of detail and information is not included in the ITS SRs and is therefore being relocated to the Bases. The Basis for ITS SR 3.6.5.1 states in part, "... an arithmetic average is calculated using measurements taken at locations within the containment selected to provide a representative sample of the overall containment atmosphere. ..." The information on sample locations is being added to the Bases. Any change to the requirements in the Bases will be governed by the provisions of the Technical Specification Bases Control Program. This provides an equivalent level of control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement to the Bases is acceptable and is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE

None

TECHNICAL CHANGES - CTS CHANGES

LB.1 CTS 3.6.1.5 states, "Primary containment average air temperature shall not exceed 120°F." ITS LCO 3.6.5 states, "Containment average air temperature shall be ≤ 117°F." The value specified in the ITS is an indicated value which takes into account the inaccuracies associated with the instruments used for data collection. Total loop uncertainty calculations have determined that the temperature instrumentation used could result in up to 3 degrees of uncertainty. The CTS value does not take these inaccuracies into account. The CTS value of 120 degrees is used as the maximum initial temperature in various analyses for containment temperature. Having the ITS specify a value of 117 degrees Fahrenheit as the maximum temperature is conservative and results in a greater level of safety than the CTS. The ITS value for the maximum indicated containment air temperature of 117 degrees is an administrative change from the analytical maximum containment air temperature of 120 degrees Fahrenheit in the CTS. This change incorporates plant specific analyses and the use of indicated values in the ITS is consistent with NUREG-1432.

NO SIGNIFICANT HAZARDS CONSIDERATION
SPECIFICATION 3.6.5

ADMINISTRATIVE CHANGES
(ITS 3.6.5 Discussion of Changes Labeled A.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, is converting to the ITS as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." The proposed changes involve the reformatting, renumbering, rewording of the Technical Specifications (TS) and Bases with no change in intent, and the incorporation of current operating practices consistent with NUREG-1432. These changes, since they do not involve technical changes to the Current TS (CTS), are administrative. Below are the No Significant Hazards Consideration (NSHC) for the conversion of this Section/Chapter to NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

> The proposed changes involve reformatting, renumbering, and rewording of the CTS and Bases along with incorporation of PVNGS current operating practices and other changes to the CTS as discussed in the specific Discussion of Changes listed above in order to be consistent with NUREG-1432. The reformatting, renumbering, and rewording along with the other changes listed above, involves no technical changes to the CTS. Specifically, there will be no change in the requirements imposed on PVNGS due to these changes. During development of NUREG-1432, certain wording preferences or English language conventions were adopted. The proposed changes to this Section/Chapter are administrative in nature and do not impact initiators of any analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

[illegible]

ADMINISTRATIVE CHANGES
(ITS 3.6.5 Discussion of Changes Labeled A.1) (continued)

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or change the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes are administrative in nature and will not involve any technical changes. The proposed changes will not reduce a margin of safety because they have no impact on any safety analysis assumptions. Also, because these changes are administrative in nature, no question of safety is involved. Therefore, these changes do not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.6.5 Discussion of Changes Labeled LA.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed changes, since detail is being removed from the CTS to a Licensee Controlled Document, are less restrictive. The descriptions of these changes are in the Discussion of Changes listed above.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

> The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes do not result in any hardware changes or changes to plant operating practices. The details being relocated are not assumed to be an initiator of any analyzed event. The Licensee Controlled Document containing the relocated requirements will be maintained using the provisions of 10 CFR 50.59 or other specified control processes and is subject to the change control process in the Administrative Controls Section of the ITS. Since any changes to a Licensee Controlled Document will be evaluated, no increase in the probability or consequences of an accident previously evaluated will be allowed. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.6.5 Discussion of Changes Labeled LA.1) (continued)

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes will not impose different requirements and adequate control of information will still be maintained. These changes will not alter assumptions made in the safety analysis or licensing basis. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not reduce a margin of safety since they have no impact on any safety analysis assumptions. In addition, the requirements to be transposed from the CTS to the Licensee Controlled Document are the same as the CTS. Since any future changes to this Licensee Controlled Document will be evaluated per the requirements of 10 CFR 50.59, or other specified control processes, no reduction (significant or insignificant) in a margin of safety will be allowed. Therefore, these changes will not involve a significant reduction in a margin of safety.

The NRC review provides a certain margin of safety, and although this review will no longer be performed prior to submittal, the NRC still inspects the 10 CFR 50.59 process. The proposed changes are consistent with NUREG-1432, which was approved by the NRC Staff. The change controls for proposed relocated details and requirements provide an acceptable level of regulatory authority. Revising the CTS to reflect the approved level of detail per NUREG-1432 reinforces the conclusion that there is not a significant reduction in the margin of safety. Therefore, revising the CTS to reflect the NRC accepted level of detail and requirements ensures no reduction in a margin of safety.

TECHNICAL CHANGES - CTS CHANGES
(ITS 3.6.5 Discussion of Changes Labeled LB.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG 1432.

LB.1 CTS 3.6.1.5 states, "Primary containment average air temperature shall not exceed 120°F." ITS LCO 3.6.5 states, "Containment average air temperature shall be ≤ 117°F." The value specified in the ITS is an indicated value which takes into account the inaccuracies associated with the instruments used for data collection. Total loop uncertainty calculations have determined that the temperature instrumentation used could result in up to 3 degrees of uncertainty. The CTS value does not take these inaccuracies into account. The CTS value of 120 degrees is used as the maximum initial temperature in various analyses for containment temperature. Having the ITS specify a value of 117 degrees Fahrenheit as the maximum temperature is conservative and results in a greater level of safety than the CTS. The ITS value for the maximum indicated containment air temperature of 117 degrees is an administrative change from the analytical maximum containment air temperature of 120 degrees Fahrenheit in the CTS. This change incorporates plant specific analyses and the use of indicated values in the ITS is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

PVNGS has evaluated these proposed CTS changes and has determined that they do not involve a significant hazards consideration. This determination has been performed in accordance with the criteria set forth in 10CFR50.92. The following evaluation is provided for the three categories of the NSHC standards:

TECHNICAL CHANGES - CTS CHANGES
(ITS 3.6.5 Discussion of Changes Labeled LB.1) (continued)

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change revises what is specified in the Technical Specifications for the maximum containment air temperature. The proposed change revises the analytical value of 120 degrees Fahrenheit to an indicated value of 117 degrees Fahrenheit. The change incorporates total loop uncertainty calculations for the instruments used for data collection in the plant. Total loop uncertainty calculations have determined that the temperature instrumentation used could result in up to 3 degrees of uncertainty. The CTS value does not take these inaccuracies into account. The CTS value of 120 degrees is used as the maximum initial temperature in various analyses for containment temperature. Having the ITS specify a value of 117 degrees Fahrenheit as the maximum temperature is conservative and results in a greater level of safety than the CTS. The ITS value for the maximum indicated containment air temperature of 117 degrees is an administrative change from the analytical maximum containment air temperature of 120 degrees Fahrenheit in the CTS. This change incorporates plant specific analyses and the use of indicated values in the ITS is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - CTS CHANGES
(ITS 3.6.5 Discussion of Changes Labeled LB.1) (continued)

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change revises what is specified in the Technical Specifications for the maximum containment air temperature. The proposed change revises the analytical value of 120 degrees Fahrenheit to an indicated value of 117 degrees Fahrenheit. The change incorporates total loop uncertainty calculations for the instruments used for data collection in the plant. Total loop uncertainty calculations have determined that the temperature instrumentation used could result in up to 3 degrees of uncertainty. The CTS value does not take these inaccuracies into account. The CTS value of 120 degrees is used as the maximum initial temperature in various analyses for containment temperature. Having the ITS specify a value of 117 degrees Fahrenheit as the maximum temperature is conservative and results in a greater level of safety than the CTS. The ITS value for the maximum indicated containment air temperature of 117 degrees is an administrative change from the analytical maximum containment air temperature of 120 degrees Fahrenheit in the CTS. This change incorporates plant specific analyses and the use of indicated values in the ITS is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - CTS CHANGES
(ITS 3.6.5 Discussion of Changes Labeled LB.1) (continued)

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed change revises what is specified in the Technical Specifications for the maximum containment air temperature. The proposed change revises the analytical value of 120 degrees Fahrenheit to an indicated value of 117 degrees Fahrenheit. The change incorporates total loop uncertainty calculations for the instruments used for data collection in the plant. Total loop uncertainty calculations have determined that the temperature instrumentation used could result in up to 3 degrees of uncertainty. The CTS value does not take these inaccuracies into account. The CTS value of 120 degrees is used as the maximum initial temperature in various analyses for containment temperature. Having the ITS specify a value of 117 degrees Fahrenheit as the maximum temperature is conservative and results in a greater level of safety than the CTS. The ITS value for the maximum indicated containment air temperature of 117 degrees is an administrative change from the analytical maximum containment air temperature of 120 degrees Fahrenheit in the CTS. This change incorporates plant specific analyses and the use of indicated values in the ITS is consistent with NUREG-1432. This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

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NUREG-1432 REV. 1

SPECIFICATION 3.6.6

MARK UP

<DOC>
<CTS>

3.6 CONTAINMENT SYSTEMS

3.6.6~~A~~ Containment Spray ~~and Cooling~~ Systems ~~(Atmospheric and Dual)~~ ~~(Credit taken for iodine removal by the Containment Spray System)~~

<3.6.2.1> LCO 3.6.6~~A~~ Two containment spray trains ~~and two containment cooling trains~~ shall be OPERABLE.

APPLICABILITY: MODES 1, 2, ~~[~~and~~]~~ 3~~[, and 4]~~.
MODE 4 when RCS pressure is ≥ 385 psia (3)

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.6.2.1 ACT>	A. One containment spray train inoperable.	A.1 Restore containment spray train to OPERABLE status.	72 hours ~~AND~~ ~~10 days from discovery of failure to meet the LCO~~ (4)
<3.6.2.1 ACT>	B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. AND B.2 Be in MODE ~~5~~ 4 with RCS pressure < 385 psia. (3)	6 hours 84 hours
	~~C. One containment cooling train inoperable.~~	~~C.1 Restore containment cooling train to OPERABLE status.~~	~~7 days~~ ~~AND~~ ~~10 days from discovery of failure to meet the LCO~~ (4)

(continued)

<DOC>
<CTS>

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~D. Two containment cooling trains inoperable.~~ 4	~~D.1 Restore one containment cooling train to OPERABLE status.~~	~~72 hours~~ 4
~~E. Required Action and associated Completion Time of Condition C or D not met.~~	~~E.1 Be in MODE 3.~~ ~~AND~~ ~~E.2 Be in MODE 5.~~	~~6 hours~~ ~~36 hours~~ 4
<DOC A.> ~~F.~~ C. Two containment spray trains inoperable. ~~OR~~ ~~Any combination of three or more trains inoperable.~~ 4	~~F.1~~ C.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
<SR4.6.2.1 a> SR 3.6.6~~A~~.1	Verify each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	31 days

(continued)

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SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY	
	~~SR 3.6.6A.2 Operate each containment cooling train fan unit for ≥ 15 minutes.~~	~~31 days~~	(4)
	~~SR 3.6.6A.3 Verify each containment cooling train cooling water flow rate is ≥ [2000] gpm to each fan cooler.~~	~~31 days~~	(4)
<SR4.6.2.1c>	SR 3.6.6~~A.4~~ 2 Verify the containment spray piping is full of water to the ~~[100]~~ 113 ft level in the containment spray header.	31 days	(2)
<SR4.6.2.1.b>	SR 3.6.6~~A.5~~ 3 Verify each containment spray pump ~~[develops ≥ [250] psid differential pressure on recirculation flow]~~ 's developed head at the flow test point is greater than or equal to the required developed head	In accordance with the Inservice Testing Program	(5)
<SR4.6.2.1.d.1> <SR4.6.2.1.d.2>	SR 3.6.6~~A.6~~ 4 Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	~~[~~18~~]~~ months	
<SR4.6.2.1.e>	SR 3.6.6~~A.7~~ 5 Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	~~[~~18~~]~~ months	
	~~SR 3.6.6A.8 Verify each containment cooling train starts automatically on an actual or simulated actuation signal.~~	~~[18] months~~	(4)

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
<SR4.6.2.1.F>	SR 3.6.6~~A.9~~ .6 Verify each spray nozzle is unobstructed.	~~At first refueling~~ ~~AND~~ 10 years 6

CE STS

NUREG-1432 REV. 1

SPECIFICATION 3.6.6

BASES MARK UP

4

B 3.6 CONTAINMENT SYSTEMS

B 3.6.6 Containment Spray System ~~and Cooling Systems (Atmospheric and Dual) (Credit taken for iodine removal by the Containment Spray System)~~

BASES

BACKGROUND

The Containment Spray ~~and Containment Cooling~~ system~~s~~ provides ~~provide~~ containment atmosphere cooling to limit post accident pressure and temperature in containment to less than the design values. Reduction of containment pressure and the iodine removal capability of the spray reduce the release of fission product radioactivity from containment to the environment, in the event of a Design Basis Accident (DBA), to within limits. The Containment Spray ~~and Containment Cooling~~ system~~s~~ is ~~are~~ designed to the requirements of 10 CFR 50, Appendix A, GDC 38, "Containment Heat Removal," GDC 39, "Inspection of Containment Heat Removal Systems," GDC 40, "Testing of Containment Heat Removal Systems," GDC 41, "Containment Atmosphere Cleanup," GDC 42, "Inspection of Containment Atmosphere Cleanup Systems," and GDC 43, "Testing of Containment Atmosphere Cleanup Systems" (Ref. 1)~~, or other documents that were appropriate at the time of licensing (identified on a unit specific basis)~~. 2

The ~~Containment Cooling System and~~ Containment Spray System is an ~~are~~ Engineered Safety Feature (ESF) system~~s~~. ~~They are~~ It is designed to ensure that the heat removal capability required during the post accident period can be attained. ~~The Containment Spray System and the Containment Cooling System provide redundant methods to limit and maintain post accident conditions to less than the containment design values.~~ 2

~~Containment Spray System~~

The Containment Spray System consists of two separate trains of equal capacity, each capable of meeting the design bases. Each train includes a containment spray pump, a shutdown cooling heat exchanger, spray headers, nozzles, valves, and piping. Each train is powered from a separate ESF bus. The refueling water tank (RWT) supplies borated water to the containment spray during the injection phase of operation. In the recirculation mode of operation, containment spray pump suction is transferred from the RWT to the containment sump(s). 2

(continued)

BASES

BACKGROUND

Containment Spray System (continued)

The Containment Spray System provides a spray of cold borated water ~~mixed with sodium hydroxide from the spray additive tank~~ into the upper regions of containment to reduce containment pressure and temperature, to provide hydrogen mixing, and to reduce the concentration of fission products in the containment atmosphere during a DBA. The RWT solution temperature is an important factor in determining the heat removal capability of the Containment Spray System during the injection phase. In both the injection phase and the recirculation mode of operation, heat is removed from the ~~containment sump~~ Spray water by the shutdown cooling heat exchangers. Each train of the Containment Spray System provides adequate spray coverage to meet ~~50%~~ 100% of the system design requirements for containment heat removal and 100% of the iodine removal design bases. (2)

~~The Spray Additive System injects a hydrazine (N_2H_4) solution into the spray. The resulting alkaline pH of the spray enhances its ability to scavenge fission products from the containment atmosphere. The N_2H_4 added to the spray also ensures an alkaline pH for the solution recirculated in the containment sump. The alkaline pH of the containment sump water minimizes the evolution of iodine and minimizes the occurrence of chloride and caustic stress corrosion on mechanical systems and components exposed to the fluid.~~ (2)

The Containment Spray System is actuated either automatically by a containment High-High pressure signal ~~coincident with a safety injection actuation signal (SIAS)~~ or manually. An automatic actuation ~~opens the containment spray pump discharge valves~~, starts the two Containment Spray System pumps, opens the containment spray header isolation valves, and begins the injection phase. ~~The containment spray header isolation valves open upon a containment spray actuation signal.~~ (2) A manual actuation of the Containment Spray System is available on the main control board to begin the same sequence. The injection phase continues until an RWT level Low signal is received. The Low level for the RWT generates a recirculation actuation signal that aligns valves from the containment spray pump suction to the containment sump. The Containment Spray System in recirculation mode maintains an equilibrium temperature between the containment atmosphere and the recirculated sump water. Operation of the Containment Spray System in the recirculation mode is controlled by the

(continued)

BASES

BACKGROUND

Containment Spray System (continued)

operator in accordance with the emergency operating procedures.

Insert Background from B3.6.9 Hydrogen Mixing System

~~Containment Cooling System~~ 2

~~Two trains of containment cooling, each of sufficient capacity to supply 50% of the design cooling requirement, are provided. Two trains with two fan units each are supplied with cooling water from a separate train of service water cooling. All four fans are required to furnish the design cooling capacity. Air is drawn into the coolers through the fans and discharged to the steam generator compartments and pressurizer compartment.~~

~~In post accident operation following a containment cooling actuation signal (CCAS), all four Containment Cooling System fans are designed to start automatically in slow speed. Cooling is shifted from the chilled water cooled coils to the service water cooled coils. The temperature of the service water is an important factor in the heat removal capability of the fan units.~~

APPLICABLE SAFETY ANALYSES

The Containment Spray System ~~and Containment Cooling System~~ 2 ~~limit~~ limits the temperature and pressure that could be experienced following a DBA. The Containment Spray System is required to be capable of reducing containment pressure to 1/2 the peak pressure within 24 hours following a DBA. The limiting DBAs considered relative to containment temperature and pressure are the loss of coolant accident (LOCA) and the main steam line break (MSLB). The DBA LOCA and MSLB are analyzed using computer codes designed to predict the resultant containment pressure and temperature transients. No DBAs are assumed to occur simultaneously or consecutively. The postulated DBAs are analyzed with regard to containment ESF systems, assuming the loss of one ESF bus, which is the worst case single active failure, resulting in one train of the Containment Spray System ~~and one train of the Containment Cooling System~~ being rendered inoperable.

The analysis and evaluation show that under the worst case scenario, the highest peak containment pressure is ~~[55.7] psig (experienced during an MSLB)~~ 52.0 psig (experienced during a LOCA) 7. The analysis shows that the peak containment vapor temperature is ~~[413]~~ 398.5 °F 2

(continued)

<Insert for Containment Spray System Applicable Safety Analyses>

B 3.6 CONTAINMENT SYSTEMS

B 3.6.~~8~~ 6 ~~Hydrogen Mixing System (HMS) (Atmospheric and Dual)~~ Containment Spray System

BASES

BACKGROUND

The ~~HMS~~ Containment Spray System reduces the potential for breach of containment due to a hydrogen oxygen reaction by providing a uniformly mixed post accident containment atmosphere, thereby minimizing the potential for local hydrogen burns due to a local pocket of hydrogen above the flammable concentration and giving the operator the capability of preventing the occurrence of a bulk hydrogen burn inside containment per 10 CFR 50.44, "Standards for Combustible Gas Control Systems in Light-Water-Cooled Reactors" (Ref. 1), and 10 CFR 50, GDC 41, "Containment Atmosphere Cleanup" (Ref. 2).

~~The post accident HMS is an Engineered Safety Feature and is designed to withstand a loss of coolant accident (LOCA) without loss of function. The system has two independent trains, each of which consists of two dome air circulation fans, motors, and controls. Each train is sized for [37,000] cfm. The two trains are initiated automatically on a containment cooling actuation signal (CCAS) or can be manually started from the control room. Each train is powered from a separate emergency power supply. Since each train can provide 100% of the mixing requirements, the system will provide its design function with a limiting single active failure.~~ (2)

The ~~HMS~~ Containment Spray System accelerates the air mixing process between the upper dome space of the containment atmosphere during LOCA operations. It also prevents any hot spot air pockets during the containment cooling mode and avoids any hydrogen concentration in pocket areas.

Hydrogen mixing within the containment is accomplished by the Containment Spray System~~,~~ ~~the containment emergency fan coolers,~~ and the containment internal structure design, which permits convective mixing and prevents entrapment. The ~~HMS, operating in conjunction with the~~ Containment Spray System ~~and the emergency fan coolers~~ prevents localized accumulations of hydrogen~~from exceeding the flammability limit of 4.1 volume percent (v/o)~~. (2)

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

(experienced during a MSLB). Both results are within the design. (See the Bases for Specifications 3.6.4~~A and 3.6.4B~~ "Containment Pressure," and 3.6.5, "Containment Air Temperature," for a detailed discussion.) The analyses and evaluations assume a power level of 102% RTP, one containment spray train ~~and one containment cooling train~~ operating, and initial (pre-accident) conditions of ~~[120]~~ 120 °F and ~~[14.7]~~ 16.7 psia. The analyses also assume a response time delayed initiation in order to provide a conservative calculation of peak containment pressure and temperature responses. 2

The effect of an inadvertent containment spray actuation has been analyzed. An inadvertent spray actuation reduces the containment pressure to ~~[-2.8]~~ -2.6 psig due to the sudden cooling effect in the interior of the air tight containment. Additional discussion is provided in the Bases for Specification~~s~~ 3.6.4~~A, 3.6.4B, and 3.6.12, "Vacuum Relief Valves."~~ 2

The modeled Containment Spray System actuation from the containment analysis is based upon a response time associated with exceeding the containment High-High pressure setpoint ~~coincident with an SIAS~~ to achieve full flow through the containment spray nozzles. The Containment Spray System total response time of ~~[60]~~ 91 seconds includes diesel generator startup (for loss of offsite power), block loading of equipment, containment spray pump startup, and spray line filling (Ref. 2). 2

Insert Applicable Safety Analyses from B3.6.9 Hydrogen Mixing System

~~The performance of the containment cooling train for post accident conditions is given in Reference 3. The result of the analysis is that each train can provide 50% of the required peak cooling capacity during the post accident condition. The train post accident cooling capacity under varying containment ambient conditions, required to perform the accident analyses, is also shown in Reference 4.~~ 4

~~The modeled Containment Cooling System actuation from the containment analysis is based upon the unit specific response time associated with exceeding the CCAS to achieve full Containment Cooling System air and safety grade cooling water flow.~~

The Containment Spray System ~~and the Containment Cooling System satisfy~~ satisfies Criterion 3 of ~~the NRC Policy Statement~~ 10CFR50.36(c)(2)(ii). 1

(continued)

<Insert for Containment Spray System
Applicable Safety Analyses>

BASES (continued)

APPLICABLE SAFETY ANALYSES Containment Spray System	The ~~HMS~~ mixes the containment atmosphere to provide a uniform hydrogen concentration. 2 Hydrogen may accumulate in containment following a LOCA as a result of: a. A metal steam reaction between the zirconium fuel rod cladding and the reactor coolant; b. Radiolytic decomposition of water in the Reactor Coolant System (RCS) and the containment sump; c. Hydrogen in the RCS at the time of the LOCA (i.e., hydrogen dissolved in the reactor coolant and hydrogen gas in the pressurizer vapor space); or d. Corrosion of metals exposed to Containment Spray System and Emergency Core Cooling Systems solutions. To evaluate the potential for hydrogen accumulation in containment following a LOCA, the hydrogen generation as a function of time following the initiation of the accident is calculated. Conservative assumptions recommended by Reference 3 are used to maximize the amount of hydrogen calculated. ~~The HMS satisfies Criterion 3 of the NRC Policy Statement.~~
~~LCO~~	~~Two HMS trains must be OPERABLE, with power to each from an independent, safety related power supply. Each train typically consists of two fans with their own motors and controls and is automatically initiated by a CCAS.~~ 1 ~~Operation with at least one HMS train provides the mixing necessary to ensure uniform hydrogen concentration throughout containment.~~
~~APPLICABILITY~~	~~In MODES 1 and 2, the two HMS trains ensure the capability to prevent localized hydrogen concentrations above the flammability limit of 4.1 v/o in containment, assuming a worst case single active failure.~~

(continued)

BASES (continued)

LCO

During a DBA, ~~a minimum of two containment cooling trains or two~~ one containment spray train~~s, or one of each,~~ is required to maintain the containment peak pressure and temperature below the design limits (Ref. 5) and ~~. Additionally, one containment spray train is also required~~ to remove iodine from the containment atmosphere ~~and~~ to maintain concentrations below those assumed in the safety analysis and provide hydrogen mixing. To ensure that these requirements are met, two containment spray trains ~~and two containment cooling units~~ must be OPERABLE. Therefore, in the event of an accident, the minimum requirements are met, assuming that the worst case single active failure occurs. (2)

Each Containment Spray System typically includes a spray pump, a shutdown cooling heat exchanger, spray headers, nozzles, valves, piping, instruments, and controls to ensure an OPERABLE flow path capable of taking suction from the RWT upon an ESF actuation signal and automatically transferring suction to the containment sump.

~~Each Containment Cooling System typically includes demisters, cooling coils, dampers, fans, instruments, and controls to ensure an OPERABLE flow path.~~ (2)

APPLICABILITY

In MODES 1, 2, 3, and ~~4~~ MODE 4 with RCS pressure ≥ 385 psia, a DBA could cause a release of radioactive material to containment and an increase in containment pressure and temperature, requiring the operation of the containment spray trains ~~and containment cooling trains~~. (3)

In MODE 4 with RCS pressure < 385 psig, and MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Thus, the Containment Spray ~~and Containment Cooling systems are~~ System is not required to be OPERABLE in these MODES ~~5 and 6~~.

ACTIONS

A.1

With one containment spray train inoperable, the inoperable containment spray train must be restored to OPERABLE status within 72 hours. In this Condition, the remaining OPERABLE spray ~~and cooling~~ trains ~~are~~ is adequate to perform the iodine removal, hydrogen mixing and containment cooling functions. The 72 hour Completion Time takes into account the redundant heat (4)

(continued)

BASES

ACTIONS

A.1 (continued)

removal capability afforded by the Containment Spray System, reasonable time for repairs, and the low probability of a DBA occurring during this period.

~~The 10 day portion of the Completion Time for Required Action A.1 is based upon engineering judgment. It takes into account the low probability of coincident entry into two Conditions in this Specification coupled with the low probability of an accident occurring during this time. Refer to Section 1.3, "Completion Times," for a more detailed discussion of the purpose of the "from discovery of failure to meet the LCO" portion of the Completion Time.~~

B.1 and B.2

If the inoperable containment spray train cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE ~~5~~ 4 with RCS pressure <385 psia 3 within 84 hours. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging plant systems. The extended interval to reach MODE ~~5~~ 4 with RCS pressure <385 psia allows additional time for the restoration of the containment spray train and is reasonable when considering that the driving force for a release of radioactive material from the Reactor Coolant System is reduced in MODE 3.

~~C.1~~

~~With one required containment cooling train inoperable, the inoperable containment cooling train must be restored to OPERABLE status within 7 days. The components in this degraded condition provide iodine removal capabilities and are capable of providing at least 100% of the heat removal needs after an accident. The 7 day Completion Time was developed taking into account the redundant heat removal capabilities afforded by combinations of the Containment Spray System and Containment Cooling System and the low probability of a DBA occurring during this period.~~ 4

(continued)

BASES

ACTIONS

C.1 (continued)

The 10 day portion of the Completion Time for Required Action C.1 is based upon engineering judgment. It takes into account the low probability of coincident entry into two Conditions in this Specification coupled with the low probability of an accident occurring during this time. Refer to Section 1.3 for a more detailed discussion of the purpose of the "from discovery of failure to meet the LCO" portion of the Completion Time.

D.1

With two required containment cooling trains inoperable, one of the required containment cooling trains must be restored to OPERABLE status within 72 hours. The components in this degraded condition provide iodine removal capabilities and are capable of providing at least 100% of the heat removal needs after an accident. The 72 hour Completion Time was developed taking into account the redundant heat removal capabilities afforded by combinations of the Containment Spray System and Containment Cooling System, the iodine removal function of the Containment Spray System, and the low probability of a DBA occurring during this period. (4)

E.1 and E.2

If the Required Actions and associated Completion Times of Condition C or D of this LCO are not met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

C — F.1

With two containment spray trains or any combination of three or more Containment Spray System and Containment Cooling System trains inoperable, the unit is in a condition (4)

(continued)

BASES

ACTIONS

C F.1 (continued)

outside the accident analysis. Therefore, LCO 3.0.3 must be entered immediately.

SURVEILLANCE REQUIREMENTS

SR 3.6.6A.1 4

Verifying the correct alignment for manual, power operated, and automatic valves in the containment spray flow path provides assurance that the proper flow paths will exist for Containment Spray System operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position since these were verified to be in the correct position prior to being secured. This SR also does not apply to valves that cannot be inadvertently misaligned, such as check valves. This SR does not require any testing or valve manipulation. Rather, it involves verifying, through a system walkdown, that those valves outside containment and capable of potentially being mispositioned are in the correct position.

2 Positioned to take suction from the RWT on a Containment Spray actuation test signal (CSAS).

~~SR 3.6.6A.2~~

~~Operating each containment cooling train fan unit for ≥ 15 minutes ensures that all trains are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected and corrective action taken. The 31 day Frequency of this SR was developed considering the known reliability of the fan units and controls, the two train redundancy available, and the low probability of a significant degradation of the containment cooling train occurring between surveillances and has been shown to be acceptable through operating experience.~~ 4

~~SR 3.6.6A.3~~

~~Verifying a service water flow rate of ≥ [2000] gpm to each cooling unit provides assurance that the design flow rate assumed in the safety analyses will be achieved (Ref. 2). Also considered in selecting this Frequency were the known reliability of the Cooling Water System, the two train~~

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.6A.3 (continued)

redundancy, and the low probability of a significant degradation of flow occurring between surveillances.

SR 3.6.6A.4 .2

113'

Verifying that the containment spray header piping is full of water to the [100] ft level minimizes the time required to fill the header. This ensures that spray flow will be admitted to the containment atmosphere within the time frame assumed in the containment analysis. The 31 day Frequency is based on the static nature of the fill header and the low probability of a significant degradation of water level in the piping occurring between surveillances. 2

The analyses shows that the header may be filled with unborated water which helps to reduce boron plate out due to evaporation.

The value of 113' is an indicated value which accounts for instrument uncertainty

SR 3.6.6A.5 .3

Verifying that each containment spray pump develops ≥ [250] psid differential pressure on recirculation ensures that spray pump performance has not degraded during the cycle. Flow and differential pressure are normal tests of centrifugal pump performance required by Section XI of the ASME Code (Ref. 6). Since the containment spray pumps cannot be tested with flow through the spray headers, they are tested on recirculation flow. This test confirms one point on the pump design curve and is indicative of overall performance. Such inservice inspections confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. The Frequency of this SR is in accordance with the Inservice Testing Program. 5

5

pump's developed head at the flow test point is greater than or equal to the required developed head

(either full flow or miniflow as conditions permit).

4 5 1

SR 3.6.6A.6 and SR 3.6.6A.7

These SRs verify that each automatic containment spray valve actuates to its correct position and that each containment spray pump starts upon receipt of an actual or simulated actuation signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The [18] month Frequency is based on the need to perform these Surveillances under the conditions that apply during a plant 2

safety Injection actuation signal, recirculation actuation signal and containment spray actuation signal as applicable.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.6~~A.6~~ 4 and SR 3.6.6~~A.7~~ 5 (continued)

outage and the potential for an unplanned transient if the Surveillances were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillances when performed at the ~~[~~18~~]~~ month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

The surveillance of containment sump isolation valves is also required by ~~SR 3.5.2.5~~ SR 3.5.3.5. A single surveillance may be used to satisfy both requirements. 1

~~SR 3.6.6A.8~~

~~This SR verifies that each containment cooling train actuates upon receipt of an actual or simulated actuation signal. The [18] month Frequency is based on engineering judgment and has been shown to be acceptable through operating experience. See SR 3.6.6A.6 and SR 3.6.6A.7, above, for further discussion of the basis for the [18] month Frequency.~~ 4

SR 3.6.6~~A.9~~ 6

With the containment spray inlet valves closed and the spray header drained of any solution, low pressure air or smoke can be blown through test connections. Performance of this SR demonstrates that each spray nozzle is unobstructed and provides assurance that spray coverage of the containment during an accident is not degraded. Due to the passive design of the nozzle, a test at ~~[the first refueling and at]~~ 10 year intervals is considered adequate to detect obstruction of the spray nozzles. 2 6

REFERENCES

1. 10 CFR 50, Appendix A, GDC 38, GDC 39, GDC 40, GDC 41, GDC 42, and GDC 43.
2. UFSAR ~~FSAR~~, Section ~~[ ]~~ 6.2.
3. UFSAR ~~FSAR~~, Section ~~[ ]~~ 6.5.

(continued)

BASES

REFERENCES (continued)

UFSAR

4. FSAR, Section [ ]. 7.3

5. FSAR, Section [ ]. 3.1.3.4

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

7. 10CFR 50.44

8. Regulatory Guide 1.7, Revision 0

NUREG-1432 EXCEPTIONS
SPECIFICATION 3.6.6

1. Grammar and/or editorial changes have been made to enhance clarity. No technical or intent changes to the Specification are made by this change.

2. The plant specific titles, nomenclature, number, parameter/value, reference, system description, system design, operating practices or analysis description was used (additions, deletions, and/or changes are included). Plant specific parameters/values were directly transferred from the CTS to the ITS.

3. NUREG-1432 LCO 3.6.6 Applicability is, "MODES 1, 2, [and] 3[, and 4]." The brackets indicate plant specific information is to be entered. PVNGS current licensing basis requires containment spray to be Operable in Modes 1, 2, 3, and Mode 4 when shutdown cooling is not in service. The design of the Containment Spray System at PVNGS precludes establishing a flow path from the containment spray pump through a shutdown cooling heat exchanger to the spray headers when shutdown cooling is in service. Since containment spray is not required when shutdown cooling is in operation, it is reasonable to also not require containment spray during operating conditions during which shutdown cooling could be placed in service. This information replaces the bracketed information in the Applicability. NUREG-1432 LCO 3.6.6 Required Action B.2 has been modified accordingly. This change does not impact safety.

4. NUREG-1432 Specification 3.6.6 contains requirements for Containment Spray and Cooling Systems which apply to both atmospheric and dual containments when credit is taken for iodine removal by the Containment spray system. ITS 3.6.6 does not contain requirements for The Containment Cooling System as the Containment Spray System performs this function at PVNGS. The Containment Spray System also performs the hydrogen mixing function and in addition with the TSP baskets, the iodine removal function. All references to the containment cooling function have been eliminated from the ITS including modified completion times required by entry into two conditions. Parenthetical statements relating to atmospheric and dual containments have been deleted as have the 'A' suffix designating credit taken for iodine removal. These changes are consistent with PVNGS design and current licensing bases.

5. NUREG-1432 SR 3.6.6.5 only requires functional testing of the containment spray pumps at recirculation flow rate. ITS SR 3.6.6.5 is changed to allow functional testing at various flow rates. PVNGS has determined that pump performance testing at reduced flow rates may be adequate to assess operational readiness as required by ASME Section XI, but should be augmented by tests performed at flow rates in the vicinity of the design flow rates when allowed by operating conditions. This change will allow testing at full flow or recirculation flow as specified by the Inservice Testing Program. Acceptance criteria will be developed and specified in accordance with the Inservice Test Program. This change provides a greater level of safety than is provided by NUREG-1432 or the CTS. This change is consistent with the SR for AFW pumps contained in NUREG-1432 SR 3.7.5.2.

6. NUREG-1432 SR 3.6.6.9 requires verification that each spray nozzle is unobstructed at the first refueling and every 10 years thereafter. All three units at PVNGS are past the first refueling; therefore, the bracketed information, "At first refueling," is not included in ITS SR 3.6.6.6.

7. The maximum peak containment internal pressure, Pa, as been changed to 52.0 psig to agree with the requirements contained within the Containment Leak Testing Program of ITS 5.0. The Discussion of Changes (DOC) for ITS 5.0 contains additional justification for this change.

PVNGS CTS
SPECIFICATION 3.6.6
MARK UP

Specification 3.6.6

A.1

3.6 CONTAINMENT SYSTEMS

~~3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS~~

3.6.6 CONTAINMENT SPRAY SYSTEM

~~LIMITING CONDITION FOR OPERATION~~

trains

LCO 3.6.6 ~~3.6.2.1~~ Two ~~independent~~ containment spray ~~systems~~ shall be OPERABLE ~~with each spray system capable of taking suction from the RWT on a containment spray actuation signal and automatically transferring suction to the containment sump on a recirculation actuation signal. Each spray system flow path from the containment sump shall be via an OPERABLE shutdown cooling heat exchanger.~~ A.1

APPLICABILITY: MODES 1, 2, 3, and ~~4*~~ MODE 4 when RCS pressure is ≥ 385 psia LB.1

ACTION:

ACT A — With one containment spray system inoperable, restore the inoperable spray system to OPERABLE status within 72 hours or be in at least HOT STANDBY within

ACT B — the next 6 hours. ~~, restore the inoperable spray system to OPERABLE status~~ and ~~within the next 48 hours or~~ be in ~~COLD SHUTDOWN~~ within the following ~~30~~ 84 hours. A.7 A.2 LB.1 MODE 4 with RCS Pressure < 385 psia

ACT C — With two containment spray trains inoperable, enter LCO 3.0.3 immediately. A.3

SURVEILLANCE REQUIREMENTS

L.1

~~4.6.2.1~~ ~~Each containment spray system shall be demonstrated OPERABLE:~~

SR 3.6.6.1 ~~a.~~ At least once per 31 days, ~~by~~ verify~~ing~~ that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position. ~~is positioned to take suction from the RWT on a containment spray actuation (CSAS) test signal,~~ LA.2

SR 3.6.6.3 ~~b.~~ ~~By~~ verify~~ing~~ that each ~~pump develops an indicated differential pressure of greater than or equal to 257 psid at greater than or equal the minimum allowable recirculation flowrate~~ pump's developed head is ≥ the required developed head at the flow test point. ~~when tested pursuant to Specification 4.0.5.~~ When tested in accordance with the Inservice Testing Program. LA.4 A.4

SR 3.6.6.2 ~~c.~~ At least once per 31 days by verifying that the system piping is full of water to the ~~60 inch~~ level in the containment spray header ~~(≥115 foot level)~~. 113 ft LB.2

A.5

SR 3.6.6.4 ~~d.~~ At least once per 18 months, ~~during shutdown, by~~ that is not locked, sealed, or otherwise secured in position, L.1

~~1.~~ Verify~~ing~~ that each automatic containment spray valve in the flow path actuates to its correct position on a ~~containment spray actuation (CSAS) and recirculation actuation (RAS) test signal~~ simulated or actual actuation signal. LA.2 L.2

~~2.~~ Verifying that upon a ~~recirculation~~ actuation ~~test~~ signal, ~~the containment sump isolation~~ valves open and that a ~~recirculation mode flow path via~~ an OPERABLE shutdown cooling ~~heat exchanger is established.~~ simulated or actual

A.6

each automatic containment spray valve in the flowpath that is not locked, sealed, or otherwise secured in position, actuates to the correct position.

LB.1 ~~*Only when shutdown cooling is not in operation.~~ L.2

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.6.6.5 — ~~d.~~ Verify~~ing~~ that each spray pump starts automatically on a ~~safety injection actuation (SIA) and on a containment spray actuation (CSA) test signal~~ Simulated or actual actuation signal (LA.2) (L.2)

SR 3.6.6.6 — ~~e.~~ ~~At least~~ once per 10 years ~~by performing an air or smoke flow test through each spray header and~~ verifying each spray nozzle is unobstructed. (LA.3)

DISCUSSION OF CHANGES
SPECIFICATION 3.6.6

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering is in accordance with the Combustion Engineering Plant (CEOG) Standard Technical Specifications NUREG-1432, Rev. 1 (NUREG-1432). As a result, the Palo Verde Nuclear Generating Station (PVNGS) Improved Technical Specifications (ITS) should be more readable, and therefore understandable, by plant operators as well as other users. During the reformatting and renumbering of the ITS, no technical changes (either actual or interpretational) to the Current Technical Specification (CTS) were made unless they were identified and justified.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During NUREG-1432 development, certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or interpretational) to the CTS.

Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more detail does not result in a technical change.

A.2 CTS 3.6.2.1 Action states in part, "... restore the inoperable spray system to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN ... ." ITS LCO 3.6.6 Required Action B.2 requires the unit to be placed in Mode 4 with RCS pressure < 385 psia. The ITS does not explicitly state the option of restoring OPERABILITY. ITS LCO 3.0.2 states, "If the LCO is met or is no longer applicable prior to expiration of the specified completion time(s), completion of the Required Action(s) is not required, unless otherwise stated." The Bases for ITS LCO 3.0.2 states, "Whether stated as a Required Action or not, correction of the entered condition is an action that may always be considered upon entering ACTIONS." The option of restoring OPERABILITY is already provided generically by ITS LCO 3.0.2, therefore it need not be restated in the individual specifications. ITS LCO 3.6.6 Required Action B.2 requires exiting the Applicability of the LCO. This Action provides the required level of safety for the specified Condition. This change is consistent with NUREG-1432.

ADMINISTRATIVE CHANGES (continued)

A.3 CTS 3.6.2.1 does not specify a Required Action for the condition of two containment spray pumps inoperable. ITS LCO 3.6.6 Action C requires that ITS LCO 3.0.3 be entered immediately if two containment spray pumps are inoperable. LCO 3.0.3 requires that the unit be in Mode 3 within 7 hours and Mode 5 in 37 hours. Operating with two containment spray pumps inoperable is a condition which is outside the design basis. With the LCO not met and no Condition for two inoperable containment spray pumps specified in the Actions, CTS 3.0.3 requires that action be taken within 1 hour to place the unit in HOT STANDBY in the next 6 hours and COLD SHUTDOWN in the following 30 hours. There is no difference in requirements between the CTS and ITS. Action C has been added to the ITS for clarification only. This change does not impact safety and is consistent with NUREG-1432.

A.4 CTS 4.6.2.1.b requires that containment spray pump inservice testing be performed pursuant to Specification 4.0.5. The details of ASME Section XI inservice testing which were contained in CTS 4.0.5 have been relocated to the Inservice Testing Program (ITS 5.5.8) and to other plant procedures. The relocation of details is discussed in the Discussion of Changes for ITS 5.5.8. This change does not impact safety and is consistent with NUREG-1432.

A.5 CTS 4.6.2.1d specifies a frequency of, "At least once per 18 months, during shutdown ... ," for testing system actuation with test signals. ITS SR 3.6.6.4 specifies an 18 month interval for this Surveillance but does not explicitly state that testing is to be performed during shutdown. The 18 month interval specified in the ITS indicates that this testing should be limited to periods when the plant is shutdown. The intent of both the CTS and the ITS frequencies are the same. The plant conditions recommended for this Surveillance are documented in the ITS Bases. This change does not impact safety and is consistent with NUREG-1432.

ADMINISTRATIVE CHANGES (continued)

A.6 CTS SR 4.6.2.1.d.2 requires verification that upon a recirculation actuation test signal, the containment sump isolation valves open and that a recirculation mode flowpath via an Operable shutdown cooling heat exchanger is established. ITS SR 3.6.6.4 requires verification that each automatic containment spray valve in the flow path that is not locked, sealed or otherwise secured in position actuates to the correct position. The containment sump isolation valves are not locked, sealed or secured in position and are part of the containment spray suction flow path. These valves are required to be tested by ITS SR 3.6.6.4. Rewording Surveillances for generic application to all system valves does not alter the requirements of the Surveillance. This change does not impact safety and is consistent with NUREG-1432.

A.7 With one containment spray system inoperable, CTS 3.6.2.1 Action requires that the system be restored to Operable status within 72 hours. If the system is not restored to Operable status within 72 hours, the unit must be placed in Hot Standby within the following 6 hours. Once the unit is in Hot Standby, 48 hours are allowed to restore Operability of the affected system. If the system is not restored to Operable status within 48 hours, the unit must be placed in cold shutdown within the following 30 hours.

ITS 3.6.6 retains these same requirements but the Conditions, Required Actions and Completion Times are converted to conform to the format specified for NUREG-1432. The CTS Action is specified as two separate Actions in the ITS. ITS LCO 3.6.6 Action A can be stated as, "With one containment spray train inoperable, restore the inoperable spray train to Operable status within 72 hours." ITS LCO Action B can be stated as, or be in Hot Standby within the following 6 hours and Cold Shutdown within the following 78 hours" (84 hours from the time the Condition was entered minus the 6 hours allowed to reach Hot Standby).

Since restoration of Operability is always an available option, it is not necessary to state it as an explicit Action. It is then apparent that the 6 hours allowed to reach Hot Standby plus the 48 hours allowed to restore Operability plus the 30 hours allowed to reach Cold Shutdown in the CTS is equivalent to the 84 hours allowed to reach Cold Shutdown allowed by the ITS.

ADMINISTRATIVE CHANGES (continued)

A.7 (continued

The only reason ITS LCO 3.6.6 Action A is for restoration of Operability, is that NUREG-1432 is written to account for plants which also have Containment Cooling Systems and therefore contains the contingency Completion Time of, "10 days from discovery of failure to meet the LCO," which prevents staying in the condition indefinitely. Action A could have been stated, "With one containment spray train inoperable, be in Mode 3 within 78 hours." Action B would then have been, "With the Required Action and associated Completion Time of Action A not met, be in Mode 4 with RCS pressure less than 385 psia within 78 hours."

This change does not impact safety and is consistent with NUREG-1432.

TECHNICAL CHANGES - MORE RESTRICTIVE

None

TECHNICAL CHANGES - RELOCATIONS

LA.1 CTS 3.6.2.1 contains a functional description of the performance of an OPERABLE containment spray system. ITS LCO 3.6.6 does not contain these details; instead, they have been relocated to the ITS Bases. These details are not required to determine the OPERABILITY of the system or components; therefore, they can be removed from the ITS.

Any change to the requirements in the Bases will be governed by the Technical Specification Bases Control Program. This provides an equivalent level of control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement to the Bases is acceptable and is consistent with NUREG-1432.

TECHNICAL CHANGES - RELOCATIONS (continued)

LA.2 CTS 4.6.2.1.a and CTS 4.6.2.1.d contain details of ESFAS test signals and the flow paths resulting from the correct alignment of valves. ITS SR 3.6.6.1, SR 3.6.6.4 and SR 3.6.6.5 do not contain the details of required test signals and flow paths. Functional details are relocated to the ITS Bases. These details are not required to determine the OPERABILITY of the system or components; therefore, they can be removed from the ITS. Relocation of these details to the ITS Bases will allow control of changes in accordance with 10CFR50.59.

Any change to the requirements in the Bases will be governed by 10CFR50.59 and the Technical Specification Bases Control Program. This provides an equivalent level of control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement to the Bases is acceptable and is consistent with NUREG-1432.

LA.3 CTS 4.6.2.1.e requires testing of the spray nozzles for obstructions by blowing air or smoke through them. ITS SR 3.6.6.6 requires testing of the spray nozzles for obstructions but does not limit the test to air or smoke tests. The details of testing are now contained in the ITS Bases. The details of test performance are not required to determine the OPERABILITY of systems or equipment; therefore, they can be removed from the ITS.

Any change to the requirements in the Bases will be governed by the Technical Specification Bases Control Program. This provides an equivalent level of control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement is acceptable and is consistent with NUREG-1432.

TECHNICAL CHANGES - RELOCATIONS (continued)

LA.4 CTS 4.6.2.1.b provides details of functional testing for the containment spray pumps. The details of flow rate and developed head are removed from the ITS and relocated to the Inservice Testing Program. Removal of these details will allow performance of ASME Section XI testing at flow rates closer to those required by the design bases. Changes in test parameters will be made in accordance with the Inservice Testing Program. Performance of functional testing at flow rates in the vicinity of design provides a better indication of equipment condition than testing at recirculation flow rates. The details of test performance are not required to determine the OPERABILITY of systems or equipment; therefore, they can be removed from the ITS.

Any change to the requirements in the Inservice Testing Program will be governed by the provisions of ITS 5.5, 10CFR50.55a and 10CFR50.59. This provides an equivalent level of control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement is acceptable and is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE

L.1 CTS 4.6.2.1a requires verification that each valve in the flow path is verified to be in the correct position to take suction from the RWT on a CSAS test signal. ITS SR 3.6.6.1 Requires a similar verification but only for valves that are not locked, sealed or otherwise secured in position. Verification of locked, sealed, or secured valves every 31 days is not required since their position was verified prior to being secured. Administrative control of locked, sealed, or secured devices assure that the likelihood of mispositioning is low. This change has no impact on safety. This change is consistent with NUREG-1432.

L.2 CTS 4.6.2.1 requires certain components to be surveilled to assure their automatic performance is acceptable when subjected to a test signal. ITS SR 3.6.6.4 and SR 3.6.6.5 allow the use of an actual or simulated actuation signal. This change allows actuation of these components for reasons other than Surveillances to be used to fulfill the Surveillance Requirements. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal. This change not impact on safety and is consistent with NUREG-1432.

TECHNICAL CHANGES - CTS CHANGES

LB.1 CTS 3/4.6.2.1 is Applicable during Modes 1, 2, 3, and Mode 4 when shutdown cooling is not in operation. ITS 3.6.6 is Applicable in Modes 1, 2, 3, and Mode 4 with RCS pressure ≥ 385 psia. The CTS uses a text description ("only when shutdown cooling is not in operation") to clarify when the specification is applicable. The ITS uses the system conditions (RCS pressure greater than or equal to 385 psia) to clarify when the specification is applicable. The system conditions required for shutdown cooling entry are RCS temperature less than 350°F and RCS pressure less than 385 psia. The change in the applicability from using a text description of shutdown cooling in operation to using the system parameters used for establishing shutdown cooling is administrative in nature. The function of the Containment Spray System is to provide cooling of the containment atmosphere to limit post accident pressure and temperature to less than design values. The amount of energy released to the containment atmosphere in a design basis accident is a function of the system parameters of the RCS (specifically pressure and temperature). Using the RCS system parameters to define the applicability of the specification is therefore acceptable. This change does not impact safety. This change is consistent with NUREG-1432 in that MODE 4 is a bracketed parameter.

LB.2 CTS 4.6.2.1c requires verification that the containment spray header is filled to the 60 inch (115 ft) level. ITS SR 3.6.6.2 requires the containment spray header to be full to the 113 foot level. The containment spray header level is used in determining the system response time for containment pressure/temperature analyses. Lowering this fill level to 113 feet indicated (110 ft actual) will not affect the response time assumed in the accident analyses. The required header fill level is plant specific information from analysis regarding the containment spray system response time and containment spray header fill time calculations. This change does not impact safety. This change is consistent with NUREG-1432 in that the containment spray header fill level is a bracketed parameter.

NO SIGNIFICANT HAZARDS CONSIDERATION
SPECIFICATION 3.6.6

ADMINISTRATIVE CHANGES
(ITS 3.6:6 Discussion of Changes Labeled A.1, A.2, A.3, A.4, A.5, A.6 and A.7)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, is converting to the ITS as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." The proposed changes involve the reformatting, renumbering, rewording of the Technical Specifications (TS) and Bases with no change in intent, and the incorporation of current operating practices consistent with NUREG-1432. These changes, since they do not involve technical changes to the Current TS (CTS), are administrative. Below are the No Significant Hazards Consideration (NSHC) for the conversion of this Section/Chapter to NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

> The proposed changes involve reformatting, renumbering, and rewording of the CTS and Bases along with incorporation of PVNGS current operating practices and other changes to the CTS as discussed in the specific Discussion of Changes listed above in order to be consistent with NUREG-1432. The reformatting, renumbering, and rewording along with the other changes listed above, involves no technical changes to the CTS. Specifically, there will be no change in the requirements imposed on PVNGS due to these changes. During development of NUREG-1432, certain wording preferences or English language conventions were adopted. The proposed changes to this Section/Chapter are administrative in nature and do not impact initiators of any analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

[illegible]

ADMINISTRATIVE CHANGES
(ITS 3.6.6 Discussion of Changes Labeled (A.1, A.2, A.3, A.4, A.5, A.6 and A.7) (continued)

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or change the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes are administrative in nature and will not involve any technical changes. The proposed changes will not reduce a margin of safety because they have no impact on any safety analysis assumptions. Also, because these changes are administrative in nature, no question of safety is involved. Therefore, these changes do not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.6.6 Discussion of Changes Labeled LA.1, LA.2, LA.3 and LA.4)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed changes, since detail is being removed from the CTS to a Licensee Controlled Document, are less restrictive. The descriptions of these changes are in the Discussion of Changes listed above.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

> The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes do not result in any hardware changes or changes to plant operating practices. The details being relocated are not assumed to be an initiator of any analyzed event. The Licensee Controlled Document containing the relocated requirements will be maintained using the provisions of 10 CFR 50.59 or other specified control processes and is subject to the change control process in the Administrative Controls Section of the ITS. Since any changes to a Licensee Controlled Document will be evaluated, no increase in the probability or consequences of an accident previously evaluated will be allowed. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.6.6 Discussion of Changes Labeled LA.1, LA.2, LA.3 and LA.4) (continued)

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes will not impose different requirements and adequate control of information will still be maintained. These changes will not alter assumptions made in the safety analysis or licensing basis. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not reduce a margin of safety since they have no impact on any safety analysis assumptions. In addition, the requirements to be transposed from the CTS to the Licensee Controlled Document are the same as the CTS. Since any future changes to this Licensee Controlled Document will be evaluated per the requirements of 10 CFR 50.59, or other specified control processes, no reduction (significant or insignificant) in a margin of safety will be allowed. Therefore, these changes will not involve a significant reduction in a margin of safety.

The NRC review provides a certain margin of safety, and although this review will no longer be performed prior to submittal, the NRC still inspects the 10 CFR 50.59 process. The proposed changes are consistent with NUREG-1432, which was approved by the NRC Staff. The change controls for proposed relocated details and requirements provide an acceptable level of regulatory authority. Revising the CTS to reflect the approved level of detail per NUREG-1432 reinforces the conclusion that there is not a significant reduction in the margin of safety. Therefore, revising the CTS to reflect the NRC accepted level of detail and requirements ensures no reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.6 Discussion of Changes Labeled L.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG 1432.

L.1 CTS 4.6.2.1a requires verification that each valve in the flow path is verified to be in the correct position to take suction from the RWT on a CSAS test signal. ITS SR 3.6.6.1 Requires a similar verification but only for valves that are not locked, sealed or otherwise secured in position. Verification of locked, sealed, or secured valves every 31 days is not required since their position was verified prior to being secured. Administrative control of locked, sealed, or secured devices assure that the likelihood of mispositioning is low. This change has no impact on safety. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.6 Discussion of Changes Labeled L.1) (continued)

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change removes the requirement to verify the position of valves which are locked, sealed, or otherwise secured in position every 31 days. These valves do not require verification every 31 days since their position was verified to be correct prior to securing them in position. With the valves secured in position, the likelihood of them becoming mispositioned is minimal. Valves which are locked, sealed or otherwise secured in position are administratively controlled as part of the PVNGS Locked Valve, Breaker, and Component Control Program. This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change removes the requirement to verify the position of valves which are locked, sealed, or otherwise secured in position every 31 days. These valves do not require verification every 31 days since their position was verified to be correct prior to securing them in position. With the valves secured in position, the likelihood of them becoming mispositioned is minimal. Valves which are locked, sealed or otherwise secured in position are administratively controlled as part of the PVNGS Locked Valve, Breaker, and Component Control Program. This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.6 Discussion of Changes Labeled L.1) (continued)

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed change removes the requirement to verify the position of valves which are locked, sealed, or otherwise secured in position every 31 days. These valves do not require verification every 31 days since their position was verified to be correct prior to securing them in position. With the valves secured in position, the likelihood of them becoming mispositioned is minimal. Valves which are locked, sealed or otherwise secured in position are administratively controlled as part of the PVNGS Locked Valve, Breaker, and Component Control Program. This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.6 Discussion of Changes Labeled L.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for conversion to NUREG-1432.

L.2 CTS 4.6.2.1 requires certain components to be surveilled to assure their automatic performance is acceptable when subjected to a test signal. ITS SR 3.6.6.4 and 3.6.6.5 allow the use of an actual or simulated actuation signal. This change allows actuation of these components for reasons other than Surveillances to be used to fulfill the Surveillance Requirements. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal. This change has no impact on safety and is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.6 Discussion of Changes Labeled L.2) (continued)

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change involves a change from the CTS requirement for verification of valve actuation using a test signal. ITS allows verification using an actual or simulated actuation signal instead of just a test signal. This change allows PVNGS to take credit for Containment Spray System SRs if actuation occurs in the event an actual actuation signal is received. In this case, if an actual signal is received and the appropriate Containment Spray System components properly actuate per the safety analysis, there would be no need to perform the SRs at the original 18 month interval. PVNGS would have the option to either start the SR frequency from receipt of the actual actuation or to retest the Containment Spray System as originally scheduled. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal. This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.6 Discussion of Changes Labeled L.2) (continued)

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change involves a change from the CTS requirement for verification of valve actuation using a test signal. ITS allows verification using an actual or simulated actuation signal instead of just a test signal. This change allows PVNGS to take credit for Containment Spray System SRs if actuation occurs in the event an actual actuation signal is received. In this case, if an actual signal is received and the appropriate Containment Spray System components properly actuate per the safety analysis, there would be no need to perform the SRs at the original 18 month interval. PVNGS would have the option to either start the SR frequency from receipt of the actual actuation or to retest the Containment Spray System as originally scheduled. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal. This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.6 Discussion of Changes Labeled L.2) (continued)

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed change involves a change from the CTS requirement for verification of valve actuation using a test signal. ITS allows verification using an actual or simulated actuation signal instead of just a test signal. This change allows PVNGS to take credit for Containment Spray System SRs if actuation occurs in the event an actual actuation signal is received. In this case, if an actual signal is received and the appropriate Containment Spray System components properly actuate per the safety analysis, there would be no need to perform the SRs at the original 18 month interval. PVNGS would have the option to either start the SR frequency from receipt of the actual actuation or to retest the Containment Spray System as originally scheduled. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal. This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - CTS CHANGES
(ITS 3.6.6 Discussion of Changes Labeled LB.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG 1432.

LB.1 CTS 3/4.6.2.1 is Applicable during Modes 1, 2, 3, and Mode 4 when shutdown cooling is not in operation. ITS 3.6.6 is Applicable in Modes 1, 2, 3, and Mode 4 with RCS pressure ≥ 385 psia. The CTS uses a text description ("only when shutdown cooling is not in operation") to clarify when the specification is applicable. The ITS uses the system conditions (RCS pressure greater than or equal to 385 psia) to clarify when the specification is applicable. The system conditions required for shutdown cooling entry are RCS temperature less than 350°F and RCS pressure less than 385 psia. The change in the applicability from using a text description of shutdown cooling in operation to using the system parameters used for establishing shutdown cooling is administrative in nature. The function of the Containment Spray System is to provide cooling of the containment atmosphere to limit post accident pressure and temperature to less than design values. The amount of energy released to the containment atmosphere in a design basis accident is a function of the system parameters of the RCS (specifically pressure and temperature). Using the RCS system parameters to define the applicability of the specification is therefore acceptable. This change does not impact safety. This change is consistent with NUREG-1432 in that MODE 4 is a bracketed parameter.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - CTS CHANGES
(ITS 3.6.6 Discussion of Changes Labeled LB.1) (continued)

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change revises the applicability of the containment spray specification. CTS 3/4.6.2.1 is Applicable during Modes 1, 2, 3, and Mode 4 when shutdown cooling is not in operation. ITS 3.6.6 is Applicable in Modes 1, 2, 3, and Mode 4 with RCS pressure ≥385 psia. The CTS uses a text description ("only when shutdown cooling is not in operation") to clarify the applicability in MODE 4. The ITS uses the system conditions (RCS pressure greater than or equal to 385 psia) to clarify the applicability in MODE 4. The system conditions required for shutdown cooling entry are RCS temperature less than 350°F and RCS pressure less than 385 psia. The change in the applicability from using a text description referencing the operation of shutdown cooling to using the system parameters used for establishing shutdown cooling operation is equivalent. The function of the Containment Spray System is to provide cooling of the containment atmosphere to limit post accident pressure and temperature to less than design values. The amount of energy released to the containment atmosphere in a design basis accident is a function of the system parameters of the RCS (specifically pressure and temperature). Using the RCS system parameters to define the applicability of the specification is therefore acceptable. This change does not impact safety. This change is consistent with NUREG-1432 in that MODE 4 is a bracketed parameter. The change incorporates plant specific operation. The change does not result in any hardware changes nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - CTS CHANGES
(ITS 3.6.6 Discussion of Changes Labeled LB.1) (continued)

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change revises the applicability of the containment spray specification. CTS 3/4.6.2.1 is Applicable during Modes 1, 2, 3, and Mode 4 when shutdown cooling is not in operation. ITS 3.6.6 is Applicable in Modes 1, 2, 3, and Mode 4 with RCS pressure ≥385 psia. The CTS uses a text description ("only when shutdown cooling is not in operation") to clarify the applicability for MODE 4. The ITS uses the system conditions (RCS pressure greater than or equal to 385 psia) to clarify the applicability for MODE 4. The system conditions required for shutdown cooling entry are RCS temperature less than 350°F and RCS pressure less than 385 psia. The change in the applicability from using a text description referencing the operation of shutdown cooling to using the system parameters used for establishing shutdown cooling operation is equivalent. The function of the Containment Spray System is to provide cooling of the containment atmosphere to limit post accident pressure and temperature to less than design values. The amount of energy released to the containment atmosphere in a design basis accident is a function of the system parameters of the RCS (specifically pressure and temperature). Using the RCS system parameters to define the applicability of the specification is therefore acceptable. This change does not impact safety. This change is consistent with NUREG-1432 in that MODE 4 is a bracketed parameter. This change will not alter assumptions made in the safety analysis. This change will not alter the plant configuration (no new of different type of equipment will be installed) or change the methods governing normal plant operation. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - CTS CHANGES
(ITS 3.6.6 Discussion of Changes Labeled LB.1) (continued)

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed change revises the applicability of the containment spray specification. CTS 3/4.6.2.1 is Applicable during Modes 1, 2, 3, and Mode 4 when shutdown cooling is not in operation. ITS 3.6.6 is Applicable in Modes 1, 2, 3, and Mode 4 with RCS pressure ≥385 psia. The CTS uses a text description ("only when shutdown cooling is not in operation") to clarify the applicability for MODE 4. The ITS uses the system conditions (RCS pressure greater than or equal to 385 psia) to clarify the applicability for MODE 4. The system conditions required for shutdown cooling entry are RCS temperature less than 350°F and RCS pressure less than 385 psia. The change in the applicability from using a text description referencing the operation of shutdown cooling to using the system parameters used for establishing shutdown cooling operation is equivalent. The function of the Containment Spray System is to provide cooling of the containment atmosphere to limit post accident pressure and temperature to less than design values. The amount of energy released to the containment atmosphere in a design basis accident is a function of the system parameters of the RCS (specifically pressure and temperature). Using the RCS system parameters to define the applicability of the specification is therefore acceptable. This change does not impact safety. This change is consistent with NUREG-1432 in that MODE 4 is a bracketed parameter. The change will not reduce a margin of safety since it has no impact on safety analysis assumptions. Therefore, this change does not result in a significant reduction in a margin of safety.

TECHNICAL CHANGES - CTS CHANGES
(ITS 3.6.6 Discussion of Changes Labeled LB.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG 1432.

LB.2 CTS 4.6.2.1c requires verification that the containment spray header is filled to the 60 inch (115 ft) level. ITS SR 3.6.6.2 requires the containment spray header to be full to the 113 foot level. The containment spray header level is used in determining the system response time for containment pressure/temperature analyses. Lowering this fill level to 113 feet indicated (110 ft actual) will not affect the response time assumed in the accident analyses. The required header fill level is plant specific information from analysis regarding the containment spray system response time and containment spray header fill time calculations. This change does not impact safety. This change is consistent with NUREG-1432 in that the containment spray header fill level is a bracketed parameter.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - CTS CHANGES
(ITS 3.6.6 Discussion of Changes Labeled LB.2) (continued)

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change involves the containment spray header fill level. CTS 4.6.2.1c requires verification that the containment spray header is filled to the 60 inch (115 ft) level. ITS SR 3.6.6.2 requires the containment spray header to be full to the 113 foot level. The containment spray header level is used in determining the system response time for containment pressure/temperature analyses. Lowering this fill level to 113 feet indicated (110 ft actual) will not affect the response time assumed in the accident analyses. The required header fill level is plant specific information from analysis regarding the containment spray system response time and containment spray header fill time calculations. This change does not impact safety. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change involves the containment spray header fill level. CTS 4.6.2.1c requires verification that the containment spray header is filled to the 60 inch (115 ft) level. ITS SR 3.6.6.2 requires the containment spray header to be full to the 113 foot level. The containment spray header level is used in determining the system response time for containment pressure/temperature analyses. Lowering this fill level to 113 feet indicated (110 ft actual) will not affect the response time assumed in the accident analyses. The required header fill level is plant specific information from analysis regarding the containment spray system response time and containment spray header fill time calculations. This change does not impact safety. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation This change will not alter assumptions made in the safety analysis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - CTS CHANGES
(ITS 3.6.6 Discussion of Changes Labeled LB.2) (continued)

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed change involves the containment spray header fill level. CTS 4.6.2.1c requires verification that the containment spray header is filled to the 60 inch (115 ft) level. ITS SR 3.6.6.2 requires the containment spray header to be full to the 113 foot level. The containment spray header level is used in determining the system response time for containment pressure/temperature analyses. Lowering this fill level to 113 feet indicated (110 ft actual) will not affect the response time assumed in the accident analyses. The required header fill level is plant specific information from analysis regarding the containment spray system response time and containment spray header fill time calculations. This change does not impact safety. This change will not reduce a margin of safety since it has no impact on the response time assumed in the safety analyses.

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.6.7
MARK UP

<DOC>
<CTS> 3.6 CONTAINMENT SYSTEMS

~~3.6.8~~ 3.6.7 Hydrogen Recombiners ~~(Atmospheric and Dual) (if permanently installed)~~

<3.6.4.2> LCO ~~3.6.8~~ 3.6.7 [Two] hydrogen recombiners shared among the three units 3 shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.6.4.2 Act> <Doc L.3> <DOC M.1> A. One hydrogen recombiner inoperable.	A.1 ---------NOTE--------- LCO 3.0.4 is not applicable. --------------------- Restore hydrogen recombiner to OPERABLE status.	30 days
<Doc L.1> [B. Two hydrogen recombiners inoperable.	B.1 Verify by administrative means that the hydrogen control function is maintained. AND B.2 Restore one hydrogen recombiner to OPERABLE status.	1 hour AND Every 12 hours thereafter 7 days]
<3.6.4.2 Act> C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours

<DOC>
<CTS>

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
<4.6.4.2.b> SR ~~3.6.8.1~~ 3.6.7.3	Perform a CHANNEL CALIBRATION to include a (2) system functional test for each hydrogen recombiner.	~~18~~ 12 months
<4.6.4.2.a.1> SR ~~3.6.8.2~~ 3.6.7.1	Visually examine each hydrogen recombiner enclosure and verify there is no evidence of abnormal conditions.	~~18~~ 6 months
<4.6.4.2.a.2> SR ~~3.6.8.3~~ 3.6.7.2	Perform a ~~resistance to ground test for each heater phase.~~ functional test for each hydrogen recombiner.	~~18~~ 6 months

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.6.7
BASES MARK UP

B 3.6 CONTAINMENT SYSTEMS

B 3.6.8 7 Hydrogen Recombiners (Atmospheric and Dual)(If permanently installed) 3

BASES

BACKGROUND

The function of the hydrogen recombiners is to eliminate the potential breach of containment due to a hydrogen oxygen reaction. Per 10 CFR 50.44, "Standards for Combustible Gas Control Systems in Light-Water-Cooled Reactors" (Ref. 1), and 10 CFR 50, GDC 41, "Containment Atmosphere Cleanup" (Ref. 2), hydrogen recombiners are required to reduce the hydrogen concentration in the containment following a loss of coolant accident (LOCA) or main steam line break (MSLB). The recombiners accomplish this by recombining hydrogen and oxygen to form water vapor. The vapor remains in containment, thus eliminating any discharge to the environment. The hydrogen recombiners are manually initiated since flammability limits would not be reached until several days after a Design Basis Accident (DBA).

3

shared among the three units

the auxiliary building

a 5hp centrifugal blower

Portions of the Hydrogen Control System which are unit specific do not affect other unit's LCOs.

Two 100% capacity independent hydrogen recombiners are provided. Each consists of controls located in the control room, a power supply, and a recombiner located in containment. The recombiners have no moving parts. 2 Recombination is accomplished by heating a hydrogen air mixture above 1150°F. The resulting water vapor and discharge gases are cooled prior to discharge from the recombiner. Air flows through the unit at 100 50 cfm with natural circulation in the unit providing the motive force. A single recombiner is capable of maintaining the hydrogen concentration in containment below the 4.1 4.0 volume percent (v/o) flammability limit. Two recombiners are provided to meet the requirement for redundancy and independence. Each recombiner is powered from a separate Engineered Safety Features bus and is provided with a separate power panel and control panel. 2

APPLICABLE SAFETY ANALYSES

The hydrogen recombiners provide for controlling the bulk hydrogen concentration in containment to less than the lower flammable concentration of 4.1 4.0 v/o following a DBA. 2 This control would prevent a containmentwide hydrogen burn, thus ensuring the pressure and temperature assumed in the analysis are not exceeded and minimizing damage to safety

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

related equipment located in containment. The limiting DBA relative to hydrogen generation is a LOCA.

Hydrogen may accumulate within containment following a LOCA as a result of:

a. A metal steam reaction between the zirconium fuel rod cladding and the reactor coolant;

b. Radiolytic decomposition of water in the Reactor Coolant System (RCS) and the containment sump;

c. Hydrogen in the RCS at the time of the LOCA (i.e., hydrogen dissolved in the reactor coolant and hydrogen gas in the pressurizer vapor space); or

d. Corrosion of metals exposed to Containment Spray System and Emergency Core Cooling Systems solutions.

To evaluate the potential for hydrogen accumulation in containment following a LOCA, the hydrogen generation as a function of time following the initiation of the accident is calculated. Conservative assumptions recommended in Reference 3 are used to maximize the amount of hydrogen calculated.

The hydrogen recombiners satisfy Criterion 3 of the NRC Policy Statement.

LCO

shared among the three units 3

Two hydrogen recombiners must be OPERABLE. This ensures operation of at least one hydrogen recombiner in the event of a worst case single active failure.

Operation with at least one hydrogen recombiner ensures that the post LOCA hydrogen concentration can be prevented from exceeding the flammability limit.

APPLICABILITY

In MODES 1 and 2, two hydrogen recombiners are required to control the post LOCA hydrogen concentration within containment below its flammability limit of 4.1 v/o, assuming a worst case single failure.
4.0 2

(continued)

BASES

APPLICABILITY (continued)

In MODES 3 and 4, both the hydrogen production rate and the total hydrogen produced after a LOCA would be less than that calculated for the DBA LOCA. Also, because of the limited time in these MODES, the probability of an accident requiring the hydrogen recombiners is low. Therefore, the hydrogen recombiners are not required in MODE 3 or 4.

In MODES 5 and 6, the probability and consequences of a LOCA are low, due to the pressure and temperature limitations. Therefore, hydrogen recombiners are not required in these MODES.

ACTIONS

A.1

5

With one containment hydrogen recombiner inoperable, the inoperable recombiner must be restored to OPERABLE status within 30 days. In this condition, the remaining OPERABLE hydrogen recombiner is adequate to perform the hydrogen control function. The 30 day Completion Time is based on the availability of the other hydrogen recombiner, the small probability of a LOCA or MSLB occurring (that would generate an amount of hydrogen that exceeds the flammability limit), and the amount of time available after a LOCA or MSLB (should one occur) for operator action to prevent hydrogen accumulation from exceeding the flammability limit.

Required Action A.1 has been modified by a Note stating that the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when one hydrogen recombiner is inoperable. This allowance is based on the availability of the other hydrogen recombiner, the small probability of a LOCA or MSLB occurring (that would generate an amount of hydrogen that exceeds the flammability limit), and the amount of time available after a LOCA or MSLB (should one occur) for operator action to prevent hydrogen accumulation from exceeding the flammability limit.

~~B.1 and B.2~~

~~[Reviewer's Note: This Condition is only allowed for units with an alternate hydrogen control system acceptable to the technical staff.]~~ 1

(continued)

BASES

ACTIONS

B.1 and B.2 (continued)

With two hydrogen recombiners inoperable, the ability to perform the hydrogen control function via alternate capabilities must be verified by administrative means within 1 hour. The alternate hydrogen control capabilities are provided by ~~[the containment Hydrogen Purge System/hydrogen recombiner/Hydrogen Ignitor System/Hydrogen Mixing System/Containment Air Dilution System/Containment Inerting System]~~ the Hydrogen Purge Cleanup System. The 1 hour Completion Time allows a reasonable period of time to verify that a loss of hydrogen control function does not exist. ~~[Reviewer's Note: The following is to be used if a non-Technical Specification alternate hydrogen control function is used to justify this Condition:~~ In addition, the alternate hydrogen control system capability must be verified every 12 hours thereafter to ensure its continued availability.] [Both] the [initial] verification [and all subsequent verifications] may be performed as an administrative check, by examining logs or other information to determine the availability of the alternate hydrogen control system. It does not mean to perform the Surveillances needed to demonstrate OPERABILITY of the alternate hydrogen control system. If the ability to perform the hydrogen control function is maintained, continued operation is permitted with two hydrogen recombiners inoperable for up to 7 days. Seven days is a reasonable time to allow two hydrogen recombiners to be inoperable because the hydrogen control function is maintained and because of the low probability of the occurrence of a LOCA that would generate hydrogen in amounts capable of exceeding the flammability limit.

C.1

If the inoperable hydrogen recombiner(s) cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging plant systems.

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.6.8.1 7.3 CHANNEL CALIBRATION

Performance of a system functional test for each hydrogen recombiner ensures that the recombiners are operational and can attain and sustain the temperature necessary for hydrogen recombination. In particular, this SR requires verification that the minimum heater sheath temperature increases to ≥ 700°F in ≤ 90 minutes. After reaching 700°F, the power is increased to maximum for approximately 2 minutes and verified to be ≥ 60 kW. 4 Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint. 12

1) resistance checks of motors, thermocouples, and heater systems, 2) testing/calibration of all flow elements, switches, and temperature elements, and 3) operation of the recombiner to include a functional test at 1200°F (±50°F) for at least 4 hours.

SR 3.6.8.2 7.1

This SR ensures that there are no physical problems that could affect recombiner operation. Since the recombiners are mechanically passive, they are not subject to mechanical failure. The only credible failures involve loss of power, blockage of the internal flow path, missile impact, etc. 2 A visual inspection is sufficient to determine abnormal conditions that could cause such failures. The [18] month 6 Frequency for this SR was developed considering that the incidence of hydrogen recombiners failing the SR in the past is low.

Insert 1

SR 3.6.8.3

This SR requires performance of a resistance to ground test for each heater phase to ensure that there are no detectable grounds in any heater phase. This is accomplished by verifying that the resistance to ground for any heater phase is ≥ 10,000 ohms. The [18] month Frequency for this SR was developed considering that the incidence of hydrogen recombiners failing the SR in the past is low.

REFERENCES

1. 10 CFR 50.44.
2. 10 CFR 50, Appendix A, GDC 41.
3. Regulatory Guide 1.7, Revision [1]. 0
4. UFSAR, Section 6.2.5

SURVEILLANCE REQUIREMENT SECTION

INSERT 1

A functional test of each Hydrogen Recombiner System assures that the recombiners remain operational. The functional test shall include operating the recombiner including the air blast heat exchanger fan motor and enclosed blower motor continuously for at least 30 minutes at a temperature of approximately 800°F reaction chamber temperature. The Frequency recommended for this Surveillance in the Improved Technical Specifications (NUREG-1432, Rev. 1) is 18 months. The Bases for NUREG-1432 was developed for permanently installed hydrogen recombiners. The two portable hydrogen recombiners at PVNGS are shared among three units; therefore, the 6 month Frequency from the initial licensing basis is retained for reliability considerations.

NUREG-1432 EXCEPTIONS
SPECIFICATION 3.6.7

1. Grammar and/or editorial changes have been made to enhance clarity. No technical or intent changes to the Specification are made by this change.

2. The plant specific titles, nomenclature, number, parameter/value, reference, system description, system design, operating practices or analysis description was used (additions, deletions, and/or changes are included). Plant specific parameters/values were directly transferred from the CTS to the ITS.

3. NUREG-1432 LCO 3.6.8 (the hydrogen recombiner specification in the NUREG is number 3.6.8) requires two hydrogen recombiners to be OPERABLE and is written for permanently installed units. ITS LCO 3.6.7 is changed to reflect the fact that there are actually two hydrogen recombiner units shared among the three units. Sharing two hydrogen recombiners between the three units is acceptable based on the low probability of occurrence of a LOCA or MSLB which would generate an amount of hydrogen which exceeds the flammability limit and the amount of time available after occurrence for the operator to take actions to prevent the hydrogen concentration from exceeding the flammability limit. This change is consistent with the current licensing bases.

4. NUREG-1432 SR 3.6.8.1 requires that a functional test of the hydrogen recombiners be performed on an 18 month interval. ITS SR 3.6.7.3 is changed to require a CHANNEL CALIBRATION which includes a system functional test to be performed on an 18 month interval. In addition to the heaters and blowers associated with the portable recombiners, there is also a control panel which must be tested on a regular basis to assure proper operation of the system. The surveillance performed to satisfy the requirements of CTS 4.6.4.2.b contains a functional test, heater to ground resistance test and visual inspection in addition to calibration of the instruments. This change will provide a greater level of safety than that provided by the Surveillance Requirements specified in NUREG 1432. This change is consistent with the current licensing bases.

PVNGS CTS
SPECIFICATION 3.6.7
MARK UP

Specification 3.6.7

(A.1)

3.6 CONTAINMENT SYSTEMS

3.6.7 ~~ELECTRIC~~ HYDROGEN RECOMBINERS

~~LIMITING CONDITION FOR OPERATION~~

LCO 3.6.7 ~~3.6.4.2~~ Two portable independent containment hydrogen recombiner systems shared among the three units shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION: NOTE: LCO 3.0.4 is not applicable (L.3)

ACT A With one hydrogen recombiner system inoperable, restore the inoperable system to OPERABLE status within 30 days ~~or meet the requirements of Specification 3.6.4.3~~, or be in at least HOT STANDBY within the next 6 hours. (M.1)

ACT C

SURVEILLANCE REQUIREMENTS

4.6.4.2 Each hydrogen recombiner system shall be demonstrated OPERABLE:

a. At least once per 6 months by:

SR 3.6.7.1 1. Verifying through a visual examination that there is no evidence of abnormal conditions within the recombiner enclosure and control console.

SR 3.6.7.2 2. Perform a functional test ~~Operating the recombiner to include the air blast heat exchanger fan motor and enclosed blower motor continuously for at least 30 minutes at a temperature of approximately 800°F reaction chamber temperature.~~ (LA.1)

SR 3.6.7.3 b. At least once per year by performing a CHANNEL CALIBRATION ~~of recombiner instrumentation~~ to include a functional test of the recombiner ~~at 1200°F (± 50°F) for at least four hours.~~ (LA.1)

ACT B With two hydrogen recombiners inoperable, verify by administrative means that the hydrogen control function is maintained within 1 hour and every 12 hours thereafter, and restore one hydrogen recombiner to OPERABLE status within 7 days. (L.1)

LA.2

HYDROGEN PURGE CLEANUP SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.4.3 A containment hydrogen purge cleanup system, shared among the three units, shall be OPERABLE and capable of being powered from a minimum of one OPERABLE emergency bus.

APPLICABILITY: MODES 1* and 2*.

ACTION:

With the containment hydrogen purge cleanup system inoperable and one hydrogen recombiner OPERABLE as determined by Specification 4.6.4.2, restore the hydrogen purge cleanup system to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.6.4.3 The hydrogen purge cleanup system shall be demonstrated OPERABLE:

a. At least once per 31 days by initiating flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 minutes.

b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:

   1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 50 scfm ± 10%.

   2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978,** meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978.**

*With less than two hydrogen recombiners OPERABLE.
**ANSI N509-1980 is applicable for this specification.

PVNGS Units 1, 2 and 3

DISCUSSION OF CHANGES
SPECIFICATION 3.6.7

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering is in accordance with the Combustion Engineering Plant (CEOG) Standard Technical Specifications NUREG-1432, Rev. 1 (NUREG-1432). As a result, the Palo Verde Nuclear Generating Station (PVNGS) Improved Technical Specifications (ITS) should be more readable, and therefore understandable, by plant operators as well as other users. During the reformatting and renumbering of the ITS, no technical changes (either actual or interpretational) to the Current Technical Specification (CTS) were made unless they were identified and justified.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During NUREG-1432 development, certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or interpretational) to the CTS.

Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more detail does not result in a technical change.

A.2 NOT USED

A.3 NOT USED

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 CTS 3.6.4.2 Action states in part, "With one hydrogen recombiner system inoperable, restore the inoperable system to OPERABLE status within 30 days or meet the requirements of Specification 3.6.4.3..." ITS LCO 3.6.7 Conditions and Required Actions do not provide the option of using the Hydrogen Purge System as a replacement for an inoperable hydrogen recombiner. CTS 3.6.4.3 allows the use of the Hydrogen Purge Cleanup System as a replacement for an inoperable Hydrogen Recombiner System for an indefinite period of time. The combination of CTS 3.6.4.2 and 3.6.4.3 effectively allows operation with only one hydrogen recombiner Operable for 30 days during which time the second recombiner can be restored to Operable status or the hydrogen purge unit declared Operable. If the Hydrogen Purge System is declared Operable, CTS 3.6.4.3 allows continued operation with one recombiner inoperable for an indefinite period.

This change will provide a greater level of safety since the Hydrogen Purge System is still available, but the inoperable recombiner must now be restored to Operable status within 30 days. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - RELOCATIONS

LA.1 The details for performance of system functional testing is relocated to the ITS Bases. The current Surveillance Tests for the hydrogen recombiners and hydrogen purge filters contain sufficient detail for performance of all CTS and ITS Surveillances. This requirement is not required to determine the OPERABILITY of a system, component or structure and therefore is being relocated to the ITS BASES.

Any change to the requirements of the ITS BASES will be governed by the provisions of the Technical Specification Bases Control Program. This provides an equivalent level of control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement is acceptable and is consistent with NUREG-1432.

TECHNICAL CHANGES - RELOCATIONS (continued

LA.2 CTS 3.6.4.3, "Hydrogen Purge Cleanup System" specifies that with only one hydrogen recombiner operable, there is 30 days allowed to restore an inoperable hydrogen purge cleanup system. ITS 3.6.7 requires an inoperable hydrogen recombiner to be restored to operable status within 30 days. This more restrictive change is covered separately in DOC M.1. This DOC is for the relocation of the hydrogen purge cleanup system requirements. Since the ITS no longer allows the use of the hydrogen purge cleanup system in lieu of an inoperable hydrogen recombiner, the requirements of the hydrogen purge cleanup system may be relocated to the Technical Requirements Manual (TRM). Any change to the requirements of the TRM will be governed by the provisions of 10CFR50.59. This provides an equivalent level of control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation is acceptable and is consistent with NUREG 1432.

TECHNICAL CHANGES - LESS RESTRICTIVE

L.1 CTS 3/4.6.4.2 and CTS 3/4.6.4.3 do not contain Actions for two hydrogen recombiners inoperable. Although CTS 3/4.6.4.3 Applicability is Modes 1 and 2 with less than two hydrogen recombiners Operable, current practice is to consider CTS 3/4.6.4.3 applicable only if one hydrogen recombiner is inoperable and enter CTS 3.0.3 if 2 hydrogen recombiners are inoperable. ITS 3.6.7 has added a Condition and associated Required Action to allow operation of the plant to continue for up to seven days with two hydrogen recombiners inoperable as long as the Hydrogen Purge Cleanup System is verified to be available. Seven days is a reasonable time to allow two hydrogen recombiners to be inoperable because the hydrogen control function is maintained, the time between the initiation of an accident and the time hydrogen control is required, and because of the low probability of the occurrence of a LOCA that would generate hydrogen in amounts capable of exceeding the flammability limit. This change is consistent with NUREG-1432.

L.2 NOT USED

TECHNICAL CHANGES - RELOCATIONS (continued

L.3 ITS LCO 3.6.7 Action A is modified by a Note which states that LCO 3.0.4 is not applicable. LCO 3.0.4 prohibits changing Modes or conditions with the LCO not met. Changing Modes with one hydrogen recombiner inoperable is acceptable because the hydrogen control function is maintained, the time between the initiation of an accident and the time hydrogen control is required, and because of the low probability of the occurrence of a LOCA that would generate hydrogen in amounts capable of exceeding the flammability limit. This change is consistent with NUREG-1432.

NO SIGNIFICANT HAZARDS CONSIDERATION
SPECIFICATION 3.6:7

ADMINISTRATIVE CHANGES
(ITS 3.6.7 Discussion of Changes Labeled A.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, is converting to the ITS as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." The proposed changes involve the reformatting, renumbering, rewording of the Technical Specifications (TS) and Bases with no change in intent, and the incorporation of current operating practices consistent with NUREG-1432. These changes, since they do not involve technical changes to the Current TS (CTS), are administrative. Below are the No Significant Hazards Consideration (NSHC) for the conversion of this Section/Chapter to NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

> The proposed changes involve reformatting, renumbering, and rewording of the CTS and Bases along with incorporation of PVNGS current operating practices and other changes to the CTS as discussed in the specific Discussion of Changes listed above in order to be consistent with NUREG-1432. The reformatting, renumbering, and rewording along with the other changes listed above, involves no technical changes to the CTS. Specifically, there will be no change in the requirements imposed on PVNGS due to these changes. During development of NUREG-1432, certain wording preferences or English language conventions were adopted. The proposed changes to this Section/Chapter are administrative in nature and do not impact initiators of any analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ADMINISTRATIVE CHANGES
(ITS 3.6.7 Discussion of Changes Labeled (A.1) (continued)

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

> The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or change the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

> The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes are administrative in nature and will not involve any technical changes. The proposed changes will not reduce a margin of safety because they have no impact on any safety analysis assumptions. Also, because these changes are administrative in nature, no question of safety is involved. Therefore, these changes do not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled M.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. This particular NSHC is for the changes labeled "Technical Changes - More Restrictive" described in the specific Discussion of Changes listed above. The proposed changes incorporate more restrictive changes into the CTS by either making current requirements more stringent or adding new requirements which currently do not exist.

M.1 CTS 3.6.4.2 Action states in part, "With one hydrogen recombiner system inoperable, restore the inoperable system to OPERABLE status within 30 days or meet the requirements of Specification 3.6.4.3(." ITS LCO 3.6.7 Conditions and Required Actions do not provide the option of using the Hydrogen Purge System as a replacement for an inoperable hydrogen recombiner. CTS 3.6.4.3 allows the use of the Hydrogen Purge Cleanup System as a replacement for an inoperable Hydrogen Recombiner System for an indefinite period of time. The combination of CTS 3.6.4.2 and 3.6.4.3 effectively allows operation with only one hydrogen recombiner Operable for 30 days during which time the second recombiner can be restored to Operable status or the hydrogen purge unit declared Operable. If the Hydrogen Purge System is declared Operable, CTS 3.6.4.3 allows continued operation with one recombiner inoperable for an indefinite period.

10CFR50.44 (e) states in part, "For facilities whose notice of hearing on the application for a construction permit was published on or after November 5, 1970, purging and/or repressurization shall not be the primary means for controlling combustible gases following a LOCA." The NRC staff has determined that this regulation does not allow the use of hydrogen purge indefinitely as allowed by the current PVNGS Specifications.
This change will provide a greater level of safety since the Hydrogen Purge System is still available, but the inoperable recombiner must now be restored to Operable status within 30 days. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.6.3 Discussion of Changes Labeled M.1)

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed changes provide more stringent requirements than previously existed in the CTS. The more stringent requirements will not result in operation that will increase the probability of initiating an analyzed event. If anything, the new requirements may decrease the probability or consequences of an analyzed event by incorporating the more restrictive changes discussed in the specific Discussion of Changes listed above. These changes will not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements will not alter the operation and will continue to ensure process variables, structures, systems, or components are maintained consistent with safety analyses and licensing basis. These changes have been reviewed to ensure that no previously evaluated accident has been adversely affected. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident evaluated.

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Making existing requirements more restrictive and adding more restrictive requirements to the CTS will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes do impose different requirements. However, they are consistent with the assumptions made in the safety analyses, licensing basis, and NUREG-1432. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed changes provide more stringent requirements than previously existed in the CTS. An evaluation of these changes concluded that adding these more restrictive requirements either increases or has no impact on the margin of safety. The changes provide additional restrictions which may enhance plant safety. These changes maintain requirements of the safety analysis, licensing basis, and NUREG-1432. As such, no question of safety is involved. Therefore, these changes will not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.6.7 Discussion of Changes Labeled LA.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed changes, since detail is being removed from the CTS to a Licensee Controlled Document, are less restrictive. The descriptions of these changes are in the Discussion of Changes listed above.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

> The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes do not result in any hardware changes or changes to plant operating practices. The details being relocated are not assumed to be an initiator of any analyzed event. The Licensee Controlled Document containing the relocated requirements will be maintained using the provisions of 10 CFR 50.59 or other specified control processes and is subject to the change control process in the Administrative Controls Section of the ITS. Since any changes to a Licensee Controlled Document will be evaluated, no increase in the probability or consequences of an accident previously evaluated will be allowed. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.6.7 Discussion of Changes Labeled LA.1) (continued)

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes will not impose different requirements and adequate control of information will still be maintained. These changes will not alter assumptions made in the safety analysis or licensing basis. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not reduce a margin of safety since they have no impact on any safety analysis assumptions. In addition, the requirements to be transposed from the CTS to the Licensee Controlled Document are the same as the CTS. Since any future changes to this Licensee Controlled Document will be evaluated per the requirements of 10 CFR 50.59, or other specified control processes, no reduction (significant or insignificant) in a margin of safety will be allowed. Therefore, these changes will not involve a significant reduction in a margin of safety.

The NRC review provides a certain margin of safety, and although this review will no longer be performed prior to submittal, the NRC still inspects the 10 CFR 50.59 process. The proposed changes are consistent with NUREG-1432, which was approved by the NRC Staff. The change controls for proposed relocated details and requirements provide an acceptable level of regulatory authority. Revising the CTS to reflect the approved level of detail per NUREG-1432 reinforces the conclusion that there is not a significant reduction in the margin of safety. Therefore, revising the CTS to reflect the NRC accepted level of detail and requirements ensures no reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.7 Discussion of Changes Labeled L.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG 1432.

L.1 CTS 3/4.6.4.2 and CTS 3/4.6.4.3 do not contain Actions for two hydrogen recombiners inoperable. Although CTS 3/4.6.4.3 Applicability is Modes 1 and 2 with less than two hydrogen recombiners Operable, current practice is to consider CTS 3/4.6.4.3 applicable only if one hydrogen recombiner is inoperable and enter CTS 3.0.3 if 2 hydrogen recombiners are inoperable. ITS 3.6.7 has added a Condition and associated Required Action to allow operation of the plant to continue for up to seven days with two hydrogen recombiners inoperable as long as the Hydrogen Purge Cleanup System is verified to be available. Seven days is a reasonable time to allow two hydrogen recombiners to be inoperable because the hydrogen control function is maintained, the time between the initiation of an accident and the time hydrogen control is required, and because of the low probability of the occurrence of a LOCA that would generate hydrogen in amounts capable of exceeding the flammability limit. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.7 Discussion of Changes Labeled L.1) (continued)

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

> The proposed change adds an Action for two hydrogen recombiners inoperable. The CTS does not contain an Action for this Condition, therefore, with two hydrogen recombiners inoperable, a plant shutdown is required in accordance with Specification 3.0.3. The proposed change requires verification by administrative means that the hydrogen control function is maintained by a functional Hydrogen Purge Cleanup System and allows 7 days to restore one hydrogen recombiner to Operable status. Allowing seven days to restore one of the inoperable hydrogen recombiners to Operable status is reasonable because the hydrogen control function is maintained by the Hydrogen Purge Cleanup System, the time between the initiation of an accident and the time hydrogen control is required is exceeds seven days, and because of the low probability of the occurrence of a LOCA that would generate hydrogen in amounts capable of exceeding the flammability limit. This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

> The proposed change adds an Action for two hydrogen recombiners inoperable. The CTS does not contain an Action for this Condition, therefore, with two hydrogen recombiners inoperable, a plant shutdown is required in accordance with Specification 3.0.3. The proposed change requires verification by administrative means that the hydrogen control function is maintained by a functional Hydrogen Purge Cleanup System and allows 7 days to restore one hydrogen recombiner to Operable status. Allowing seven days to restore one of the inoperable hydrogen recombiners to Operable status is reasonable because the hydrogen control function is maintained by the Hydrogen Purge Cleanup System, the time between the initiation of an accident and the time hydrogen control is required is exceeds seven days, and because of the low probability of the occurrence of a LOCA that would generate hydrogen in amounts capable of exceeding the flammability limit. This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.7 Discussion of Changes Labeled L.1) (continued)

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed change adds an Action for two hydrogen recombiners inoperable. The CTS does not contain an Action for this Condition, therefore, with two hydrogen recombiners inoperable, a plant shutdown is required in accordance with Specification 3.0.3. The proposed change requires verification by administrative means that the hydrogen control function is maintained by a functional Hydrogen Purge Cleanup System and allows 7 days to restore one hydrogen recombiner to Operable status. Allowing seven days to restore one of the inoperable hydrogen recombiners to Operable status is reasonable because the hydrogen control function is maintained by the Hydrogen Purge Cleanup System, the time between the initiation of an accident and the time hydrogen control is required is exceeds seven days, and because of the low probability of the occurrence of a LOCA that would generate hydrogen in amounts capable of exceeding the flammability limit. This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.7 Discussion of Changes Labeled L.3)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for conversion to NUREG-1432.

L.3 ITS LCO 3.6.7 Action A is modified by a Note which states that LCO 3.0.4 is not applicable. LCO 3.0.4 prohibits changing Modes or conditions with the LCO not met. Changing Modes with one hydrogen recombiner inoperable is acceptable because the hydrogen control function is maintained, the time between the initiation of an accident and the time hydrogen control is required, and because of the low probability of the occurrence of a LOCA that would generate hydrogen in amounts capable of exceeding the flammability limit. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

Standard 1.-- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

> The proposed change allows an exclusion from the requirements of Specification LCO 3.0.4 with one hydrogen recombiner inoperable. LCO 3.0.4 prohibits changing Modes or other conditions specified in the Applicability if the LCO is not met. Allowing a Mode change with one hydrogen recombiner is acceptable since the hydrogen control function will still be maintained by one Operable hydrogen recombiner and the functional hydrogen purge unit. The time between initiation of an accident and the time hydrogen control is required is also sufficient to restore Operability or comply with the Actions. This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.6.7 Discussion of Changes Labeled L.3) (continued)

Standard 2.-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change allows an exclusion from the requirements of Specification LCO 3.0.4 with one hydrogen recombiner inoperable. LCO 3.0.4 prohibits changing Modes or other conditions specified in the Applicability if the LCO is not met. Allowing a Mode change with one hydrogen recombiner is acceptable since the hydrogen control function will still be maintained by one Operable hydrogen recombiner and the functional hydrogen purge unit. The time between initiation of an accident and the time hydrogen control is required is also sufficient to restore Operability or comply with the Actions. This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

Standard 3.-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed change allows an exclusion from the requirements of Specification LCO 3.0.4 with one hydrogen recombiner inoperable. LCO 3.0.4 prohibits changing Modes or other conditions specified in the Applicability if the LCO is not met. Allowing a Mode change with one hydrogen recombiner is acceptable since the hydrogen control function will still be maintained by one Operable hydrogen recombiner and the functional hydrogen purge unit. The time between initiation of an accident and the time hydrogen control is required is also sufficient to restore Operability or comply with the Actions. This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.